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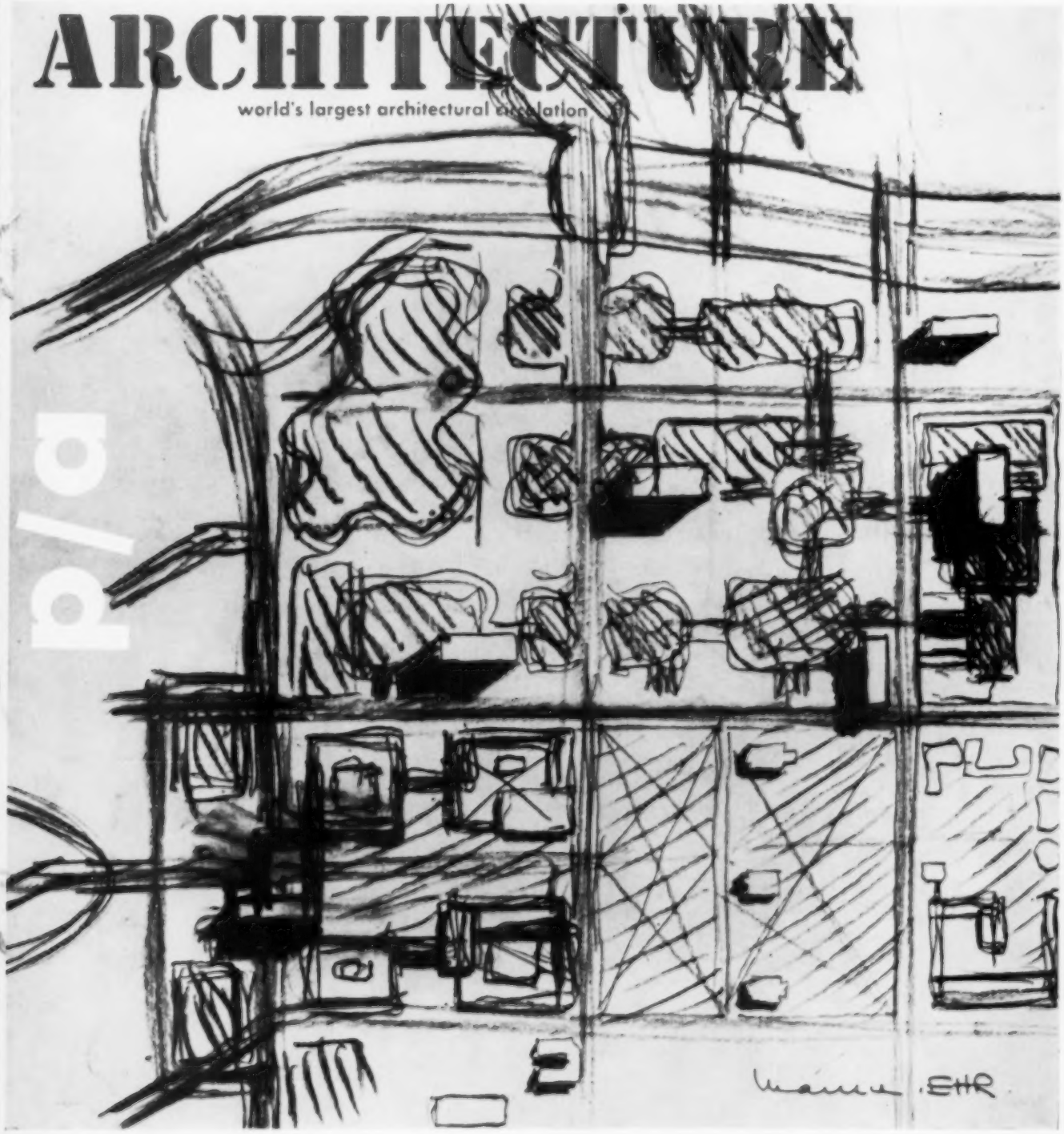


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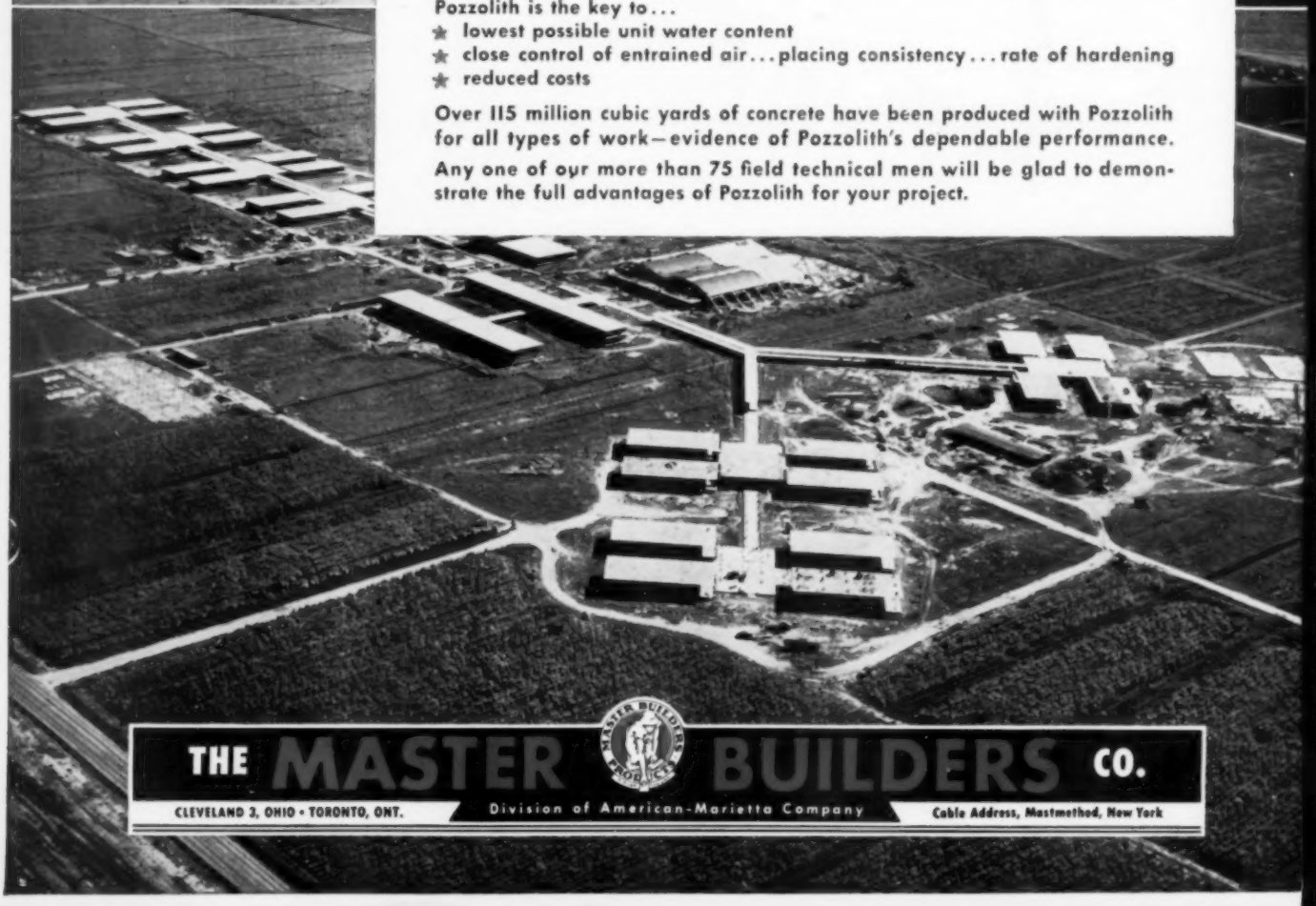

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PROGRESSIVE ARCHITECTURE

August 1956

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# *It's the Law* *by Bernard Tomson*

**P/A Office Practice** ***article further exploring the complexities of Arbitration of Disputes under Contracts.***

Can one of two Associated Architects require arbitration, under the AIA form contract, of a dispute arising between him and the Owner, despite the passive and active opposition of the other Associated Architect? This is the question involved in a recent case argued before the New York Court of Appeals, the highest court of New York.

The case before the Court of Appeals involved architectural services for the construction of a school building. In 1951 an Architect (who will be called Architect "A") negotiated with a Board of Education in respect to furnishing services on a proposed school building. He was only interested in performing the design and supervision phases of the work and it was necessary for the Board to retain a second Architect (who will be called Architect "B") to furnish working drawings and specifications.

The Board of Education entered into a single contract with Architects "A" and "B" in association, the contract designating them as "the Architect." The contract was the AIA standard form of agreement between Owner and Architect, and provided "all questions in dispute under this agreement should be submitted to arbitration at the choice of either party."

On the same day that Architects "A" and "B" entered into the agreement with the Board of Education, they also entered into an agreement of association between themselves, incorporating by reference the provisions of the contract between Owner and Architect. The terms of the agreement of association provided for the division of work and for a 50-50 division of fees. Architect "A" was an individual practitioner and Architect "B" was a partnership consisting of two partners.

Construction of the school was commenced in 1953 under supervision of Architect "A," as provided in the agreement of association. One of the services of Architect "A" was, of course, to issue certificates of payment to the Contractor. It was contended before the Court by Architect "A" that as construction progressed he was of the opinion that a request for payment of a certain requisition by the Contractor was excessive and that the progress of the construction was such that the Contractor might not be able to complete the same within the construction contract price. Architect "A" thus required, he stated, a further justification by the Contractor of his requisition before he, the Architect, would issue a certificate of payment.

The Contractor threatened to terminate his contract and to stop the work and, in fact, he reduced the number of workmen on the project. Further, the Contractor filed a claim for damages against the Owner, the Board of Education. The Board, in order to avoid delay in the completion of the job by the Contractor, made a substantial payment to him and discharged Architect "A."

Architect "A" then filed a claim against the Board of Education for the balance of his fee, as provided by the contract, and for disbursements which he had made. This claim was rejected. Architect "A" then requested Architect "B" to join in a demand for arbitration, but Architect "B" did not reply to this request. Architect "A" then demanded arbitration against the Owner in his own name and in his demand for arbitration he requested that the arbitrator determine whether the Board was justified in depriving him of his right to supervise the job and whether he was entitled to be paid his full share of the contract price for architectural services performed under the contract with the Board.

The demand for arbitration further requested that the arbitration be held pursuant to the rules of the American Institute of Architects, even though the provision for arbitration in the AIA form contract did not provide for such procedure and, in fact, provided for no standard procedure at all.

The Board of Education and Architect "B" commenced legal action to stay the demand for arbitration and the Board opposed such demand on the ground, among others, that the arbitration clause contained in the form AIA contract did not permit arbitration of any dispute in respect to the interpretation of the contract, or in respect to its breach. The lower New York court denied the right of Architect "A" to demand arbitration and held that the questions raised by Architect "A" did not relate to a dispute between "Owner" and "Architect" under the Owner-Architect contract, but that Architect "A" would be required to sue the Owner for damages for any tortious act on the part of the Owner claimed by Architect "A."

Architect "A" then filed a new demand for arbitration in the joint names of Architect "A" and "B." Again, the Board of Education and Architect "B" opposed this demand. The lower New York court again held that arbitration was not appropriate. The court pointed out that Architect "B" was a partnership consisting of two partners, whereas Architect "A" was a single individual, and, therefore, the court concluded, the partners of Architect "B" constituted a majority of all partners.

Both of the decisions of the lower court were eventually appealed to the New York Court of Appeals and that Court reversed in each instance. The Court held that any differences between Architect "A" and the Contractor, or between Architect "A" and his Associate, Architect "B," arose out of performance of Architect "A's" duties under the contract and that, therefore, any dispute between Architect "A" and the Owner as to the propriety of their acts was subject to arbitration under the arbitration clause. The Court further concluded that Architect "A" could require arbitration without the acquiescence of Architect "B." The Court pointed out that the associated partnership consisted of two members, Architect "A," an individual, and Architect "B," a partnership. The commissions were to be paid one-half to Architect "A" and one-half to Architect "B." The association contract was executed by the partners of Architect "B" not as individuals, but as members of a partnership which is one entity. The Court concluded:

"Under such conditions, one of two members of a partnership may demand arbitration without consent of the other partner, as such partner is an agent of the partnership. . . . We do not decide whether one of three equal partners may compel arbitration of a dispute arising out of a contract to which the partnership is a party."

This case illustrates: (1) the importance and necessity of the preparation or review of agreements of association between Architects and between Owner and Architect by competent legal counsel; (2) that form contracts, whether AIA or otherwise, must be adapted to each particular situation; (3) that an arbitration clause must be written sufficiently broad to include all questions and disputes of whatsoever nature that may arise and to provide for a workable, standard, arbitration procedure; and (4) that the relationship of Associated Architects between themselves and to the Owner must be clearly defined to avoid further disputes.

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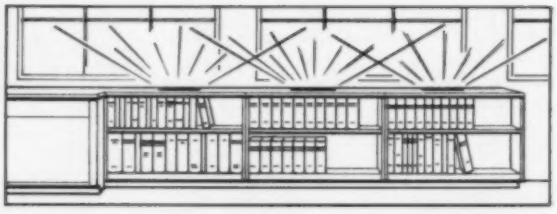

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# *Mechanical Engineering Critique*

*by William J. McGuinness*

**P/A Office Practice *column on mechanical and electrical design in architecture is devoted this month to the subject, "Air Conditioned Village" Report.***

From time to time we have heard of the "Air Conditioned Village" at Austin, Texas—a group of houses in a number of designs and using varied equipment. These homes have been studied in detail, not only for the social and psychological effects on occupants but also with the following technical objectives in mind: (1) comfort; (2) planning; (3) financing.

The project was sponsored by the National Association of Home Builders, the National Warm Air Heating and Air Conditioning Association, and the Air Conditioning and Refrigeration Institute. Architect Ned A. Cole has been the Project Manager of the Development.

Reports of psychological studies of air-conditioned living made by the University of Texas already has been made public. They showed that the conditioned environment favored sleeping, family life, reduction of fatigue due to housework, improved diet, and many other factors of social significance. Last January, at the annual convention of the NAHB in Chicago, Cole announced the technical findings. A summary of these findings will be of interest to architects, engineers, home builders, heating and air-conditioning contractors, and equipment manufacturers. A complete report. *Residential Air Conditioning*, was published last May, by NAHB Research Institute.

Twenty-two completed and occupied homes were tested by permission of builders and owners. All were provided with warm-air heating and made use of the same ducts for summer distribution of conditioned air. The cost of each of the homes was approximately $12,000 plus land cost. All were one-story structures, some over crawl spaces and others on concrete slabs. Floor areas varied from 1150 sq ft to 1450 sq ft. Some of the slab houses used perimeter air distribution through round, subslab ducts.

### comfort

Air temperature, air motion, relative humidity, and the mean radiant temperature (MRT) of the interior room surfaces all had an effect on comfort. The effects of each were studied by varying that condition, while maintaining the others constant. At 77F air temperature, 50 percent relative humidity (RH), and air in motion, there were no complaints. Under the same conditions, but with still air, 18 of the 22 families were uncomfortable. At the same temperature and with air in motion, equal comfort was reported for RH of either 30 or 70 percent. When the RH was varied rapidly between these limits, there were, again, 18 complaints. With air in motion, and 50 percent RH, an air temperature of 75F was comfortable while 70F was too cool. At 50 percent RH with air in motion an MRT of 77F drew no complaints, 80F brought 5 complaints, and 82F, 18 complaints. Conclusions: Desirable standards are continuous air circulation, constant RH, air temperature not too low, and MRT kept low by insulation and especially by prevention of direct entry of sunlight through glass.

Uniform air temperature in the various parts of the room was found to contribute to comfort. If the air temperatures 3 in. above the floor and 60 in. above the floor are not more than 4 degrees F apart, the variation is not noticeable. Ceiling diffusers and unobstructed perimeter floor registers proved better than high or low wall registers. The former maintained a differential of a fraction of a degree F between the two levels while the latter allowed 3 degrees F. The only really unsatisfactory condition occurred with obstructed perimeter floor registers. They permitted a variation of 7 degrees F.

Only two families reported discomfort due to noise, although it sometimes reached 40 decibels. The NAHB report includes suggestions for sound minimization. Controlled rates of fresh air, from 10 to 25 percent of the air circulated, did not improve comfort and it was concluded that fresh air is not needed for this type and condition of occupancy.

### planning

Outside conditions for cooling design in Austin are 100F dry bulb and 78F wet bulb. The cooling season there is longer and the daily temperatures higher than in most parts of the country. The problem at Austin, therefore, is severe and design considerations would be less critical at most other locations.

Heat gain through a slab on the ground is minimal except at the edge where one in. of rigid insulation reduces it to an acceptable degree. Gain from normal ventilation of crawl space is negligible, but a vapor seal on grade is needed to prevent condensation. The effect of double glazing in reducing heat gain is small but all glass should be fully shaded at all times. Omission of east and west windows and the installation of overhangs for both south and north glass are recommended.

The heat produced by cooking ranges and clothes dryers should be removed directly by ventilation, but this was found to be not necessary in the case of water heaters, dishwashers, clothes washers, and showers. Surprisingly, attic ventilation was found to be of questionable value. It is thought that the radiant effect in heat transfer from the lower surface of the roof to the upper surface of the ceiling is a very large part of this heat gain item. Furnaces of the upflow, counterflow, and horizontal types were used as required by the architecture. Best results followed the use of properly sized (not oversized) compressors and the use of dual compressors with one in almost constant operation. A single-return air grill was satisfactory for these small installations, but its location too close to the furnace sometimes created a noise problem.

### financing

For the installation of the cooling unit in a house of this size, $6 per month can be added to the monthly payment for a 20-year mortgage. The cost of fuel for gas heating plus electric cooling averaged about $115 per year. An average of 9 sq ft of floor space was required for the unit. The construction cost of this space is about $100. Direct labor cost at site for installing heating, cooling, and the duct system was about $300, held purposely low in this era of factory-complete units. A maintenance contract for the owner during the one-year warranty period is suggested. The cost to the contractor of one year's service did not exceed $50. The difference in the operating cost between air-cooled and water-cooled units was insignificant. Water cooling, however, is sometimes troublesome in areas where water has a high mineral content.

It is important that the mortgage appraisal include the cost of cooling on a most favorable basis. A study of 12 FHA and VA offices in 1955 showed that appraisals included 94 percent of the cost of air conditioning, including installation and builder's profit. In 1954, this figure was 74 percent.

# DIVIDE and CONQUER

## HOT WAR - COLD WAR

This well known military tactic finds scientific and practical application in the HOT WAR of summer with invasion of heat, and the COLD WAR of winter with heat loss from buildings.

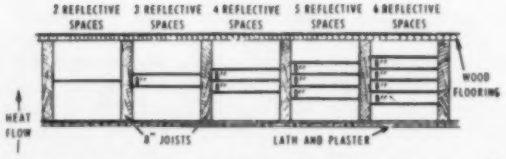
For a marked increase in insulating value because of a marked reduction in heat flow by convection upward and laterally, divide the depth of joist spaces into multiple shallower spaces. This important scientific contribution, the result of research by H. E. Robinson and F. J. Powlitch, under the direction of R. S. Dill, all of the National Bureau of Standards, was published by the Housing & Home Finance Agency under the title, "The Thermal Insulating Value of Air Spaces, Research Paper 32."

They report that as the temperature difference between bounding surfaces in an air space decreases, convection also decreases. The more the space is subdivided, the greater is the *division of the original spread of temperature.* Therefore each space carries a *smaller burden of temperature difference,* and has greater insulating value. This is true down to about 1".

### LAW OF APPRECIATING RETURNS

For this reason, for heat flowing in the up and lateral directions, successive reflective spaces, one behind the other, follow a law of *appreciating* returns. Each reflective space thus formed follows a pattern of increasing insulating value as the number of subdivisions of the joist space increases.

*Each* 1" reflective space where the joist space has been subdivided in six parts, has greater insulating value than each similar 1" space where it has been subdivided in 5 parts; which in turn has greater value than each such 1" space where there are 4 subdivisions, etc.




The total insulating value in an 8" space of 6 such reflective spaces is *more than twice* that of 3 such spaces, *over 50%* better than 4.

### GREATEST HEAT FLOW BY RADIATION

The greatest flow of heat across building spaces is by Radiation. When aluminum subdivides joist spaces into successive reflective spaces, heat flow by radiation as well as convection is also drastically reduced, because aluminum surfaces have 97% reflectivity, and 3% absorptivity and emissivity for heat rays. Conduction is slight through the low density air spaces.

The Thermal Factors below were calculated by Infra engineers, with the use of Research Paper 32. The ceiling joist was taken as $7\frac{5}{8}$"; floor joist $9\frac{5}{8}$"; wall stud $3\frac{5}{8}$" for 3 and 4 spaces, $5\frac{5}{8}$" for 5 and 6 spaces. The roof was taken as asphalt shingles or roll roofing on $\frac{25}{32}$" solid wood sheathing. Air temperatures were assumed as follows:

| | Heat Flow | Inside Temp.—°F | Outside Temp.—°F | Mean Temp.—°F | Temp. Diff.—°F |
|---|---|---|---|---|---|
| Walls | side | 70 | 0 | 35 | 70 |
| Ceilings | up | 80 | 10 (attic) | 45 | 70 |
| Ceilings | down | 90 | 120 (attic) | 105 | 30 |
| Floors | down | 65 | 30 | 48 | 35 |

## THERMAL FACTORS FOR PARALLEL REFLECTIVE AIR SPACES

(In Btu per sq. ft., per hour, per degree F)

Where Dividing Media are ALUMINUM with .03 emissivity, and PAPER, spaced 1" apart.

Calculated on the basis of work done by the National Bureau of Standards
For Housing & Home Finance Agency's Research Paper No. 32

| Number of REFLECTIVE SPACES | UP-HEAT C FACTOR | UP-HEAT R FACTOR (=1/C) | UP-HEAT U FACTOR Ceiling & Roof (unfloored attic) | DOWN-HEAT C FACTOR | DOWN-HEAT R FACTOR (=1/C) | DOWN-HEAT U FACTOR Ceiling & Roof (unfloored attic) | DOWN-HEAT U FACTOR Floor over Crawl Space | SIDE-HEAT C FACTOR Wall | SIDE-HEAT U FACTOR Wall |
|---|---|---|---|---|---|---|---|---|---|
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| 5 REFLECTIVE SPACES 3 aluminum foils 1 paper sheet . . . 1" apart | .081 | 12.29 | .066 | .034 | 29.40 | .031 | .030 | .051 | .044 |
| 6 REFLECTIVE SPACES 3 aluminum foils 2 paper sheets . . 1" apart | .067 | 14.81 | .056 | .032 | 30.80 | .030 | .026 | .042 | .037 |

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# *Techniques Employed By A Town-Planning Group*

**P/A Office Practice** ***article devoted this month to procedures of Technical Planning Associates, New Haven, Connecticut.***

In the belief that town planning needs the closest collaboration of several design professions and that this goal can best be achieved in a single organization, Technical Planning Associates, of New Haven, Connecticut, came into being in the closing year of World War II. In 1945, three Connecticut architects, a landscape architect, an engineer, an architecturally trained city planner, and a lawyer joined their talents in establishing an office to carry on the many phases of planning for communities. As individuals, these men had all participated in planning affairs in their local communities—several as members of zoning and planning commissions and others in the Connecticut legislature assisting in the writing of planning, zoning, and redevelopment laws.

As an organization, this group does not engage in the design or engineering of buildings or other works, although offices of individual members are busily engaged in these activities. As a body, it carries on all kinds of general planning—including detailed plans for areas or sites—but it stops short of actual working drawings, whether for buildings, roads, or landscaping.

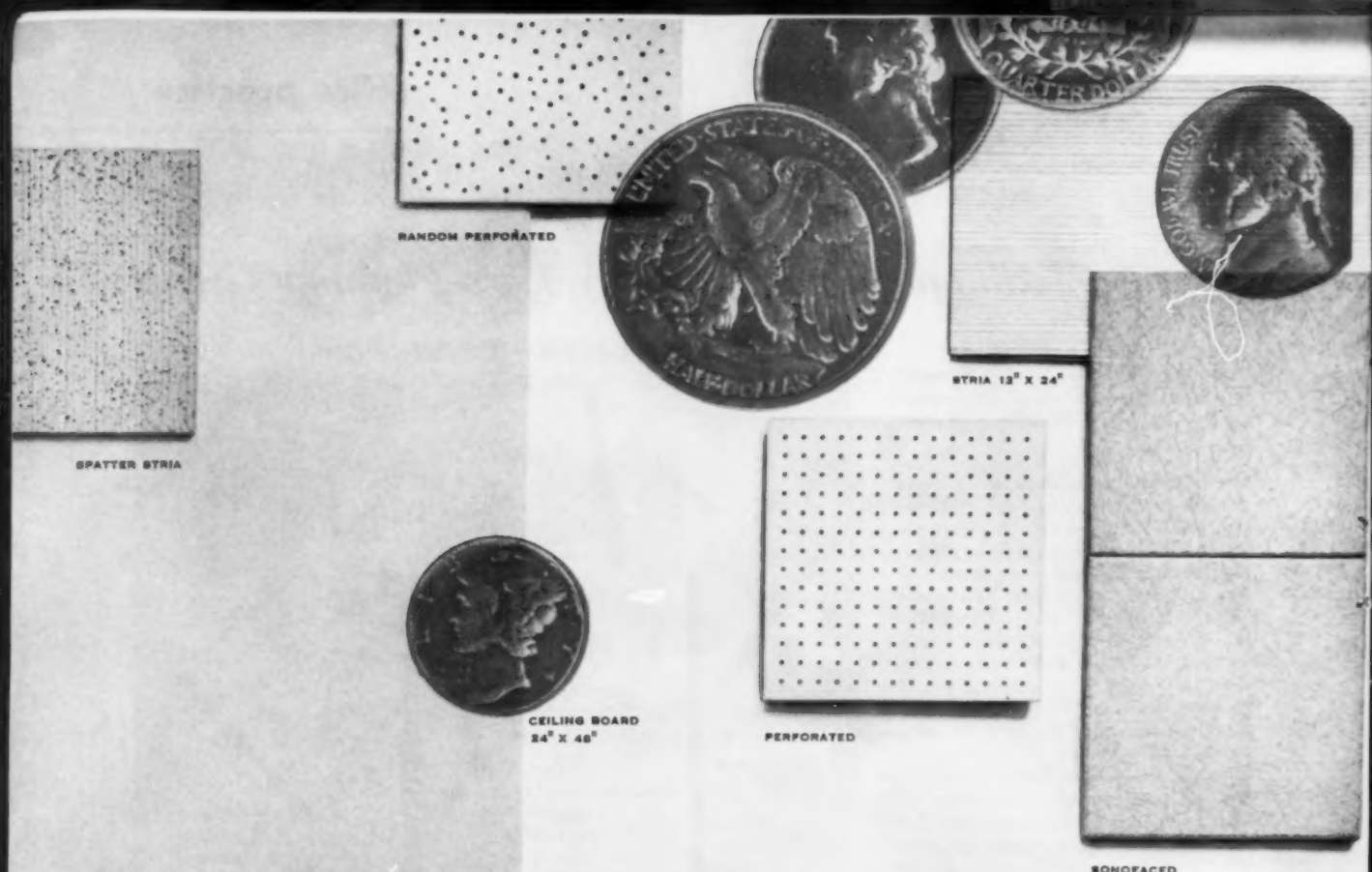
These associates emphasize that successful town planning requires continuous contact with the people and officials of each locality, over a long period of time, and that planning must be a continuing process carried on by the community. Experience has taught them that no two communities are alike, despite external similarities, and that the smaller the community, the greater the number of people who mix in planning affairs. Unlike the normal architectural commission, the planner's contact is with all of the people in a town, so that any problem of client relations also becomes one of public relations. This has become to be recognized as one of the most important, if not the most important, phase of planning.

Basic to the philosophy of TPA is the belief that town planning is closely allied to architecture. The associates feel that there is only a difference of scale and of materials between the design of a building and the design of a community. There exists the same combination of physical and human elements in each. As in a building, it is felt that the plan must be based on function. Its ultimate goal is the best possible arrangement of space-uses and the circulation between them.

*These representative Town Plans* (above) *developed by TPA are in reality statements of policy, supported by the residents generally, as to what they believe the community should be in the foreseeable future. They consist of maps which show proposed pattern of over-all development and a description in words.*

A pattern for community planning programs has been evolved. Initially a pilot plan establishes the general principles of the scheme, just as the first preliminary sketch does for a building. Like the building, the preliminary plan for the community must be based on sound research as to occupancy and use of its components, mechanical equipment required, circulation, and economics. Therefore, the pilot plan is accompanied by a preliminary analytical study of the general patterns of land use, population, traffic, public facilities and utilities, and economic factors. The pilot plan itself is a "soft-pencil sketch" which portrays a broad and somewhat schematic picture of long-range development, with the basic land use, traffic arteries, and other parts of the whole scheme. This is usually presented to the community in the form of a simple illustrated booklet, to be studied and discussed by officials and interested persons. The next step is to follow the pilot plan with more detailed studies which produce an over-all town plan—a kind of second edition of the preliminary sketch which is often revised in the light of public discussion and further examination of its various elements. Even this study is not carried too far and is constantly under scrutiny and brought up to date as new conditions affect it in one way or another. Since many of the projects are years in execution, it is felt that there is no need to extend the planning beyond this stage.

In several communities, chiefly suburban towns, TPA has taken sizable undeveloped areas and produced detailed master plans showing proposed

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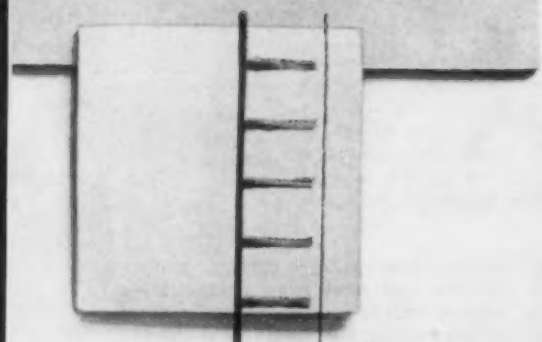


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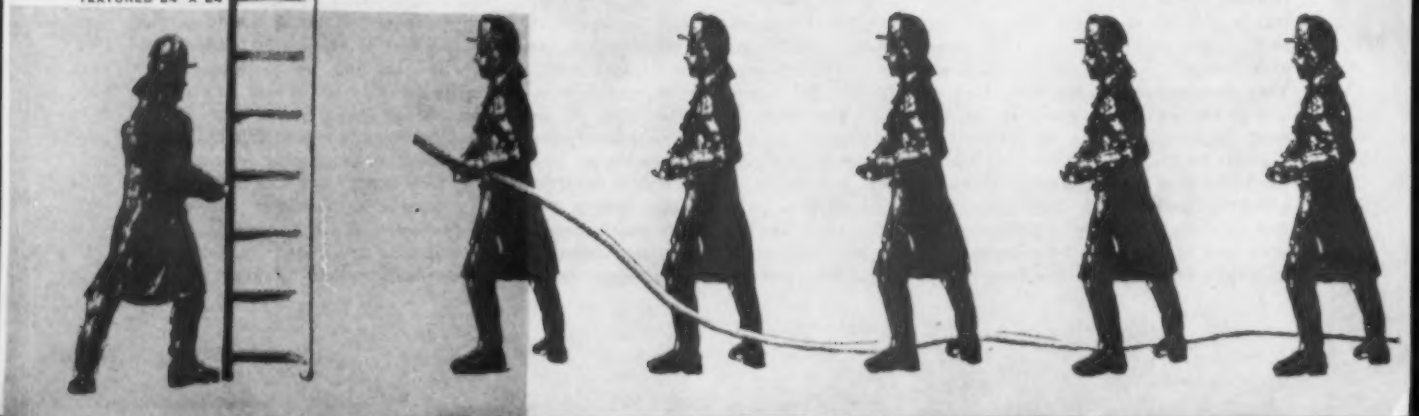


## *Techniques Employed By A Town-Planning Group*

streets, roads, and a general scheme of lot subdivision. These towns find that such plans are valuable as a guide to individual developers and especially to the local planning authorities in approving subdivisions. It is also a great help in dealing with local zoning problems.

In studies of this sort, a careful analysis of population growth is made in order to arrive at a realistic idea of the probable number of future residents. A procedure has been established to map developable land in a community showing areas already built up, swamps, steep slopes, and so on. Proposed zoning is thus related to the available residue, keeping a balance between residences and other uses (with taxes in mind) and controlling the rate of distribution of growth within the framework of the town's public facilities and financial resources. It has been generally found that existing zoning would permit a population far in excess of what could be expected or assimilated. Raw land is still plentiful, even though it is rapidly filling up. Thus the problem becomes one of spreading the development in a logical manner, bearing in mind the decentralizing trend which is apparent everywhere. In such master plans, special attention is paid to drainage, especially in the layout of roads. As much land as possible—especially that which is unsuited for building—is reserved for recreation and open space.

Similarly, TPA has engaged in detailed studies of limited areas—business and civic centers, housing, etc. They are currently carrying on redevelopment studies in various communities in connection with the Federal urban-renewal program.

A very special situation has developed in Connecticut since the floods of August and September of last year. This group has been extremely busy helping stricken communities to salvage what they could and to build more realistically for the future.

A considerable part of TPA time is consumed in consultations for such subjects as zoning, subdivision control, traffic, and parking. Activities of the organization have also been in the economic field: studies of municipal finances and of long range capital budgets, as well as of business and industry in the community with a view to determining the use and availability of land for those purposes.

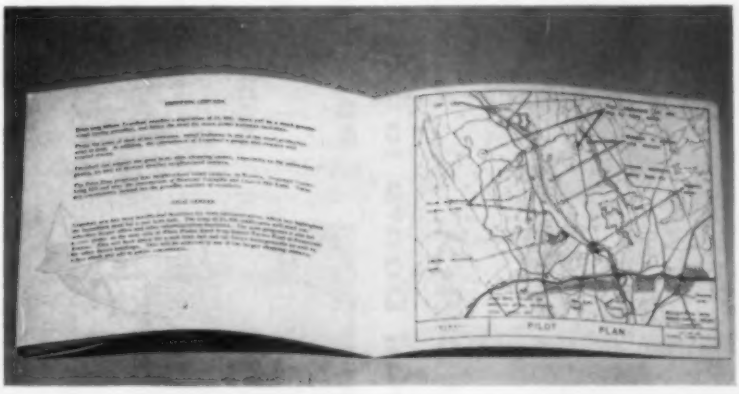
Although most of TPA's work is for municipalities, there are often jobs for private clients. These range from individuals looking for help in dividing large estates to large-scale developers needing professional advice on residential or commercial layouts.

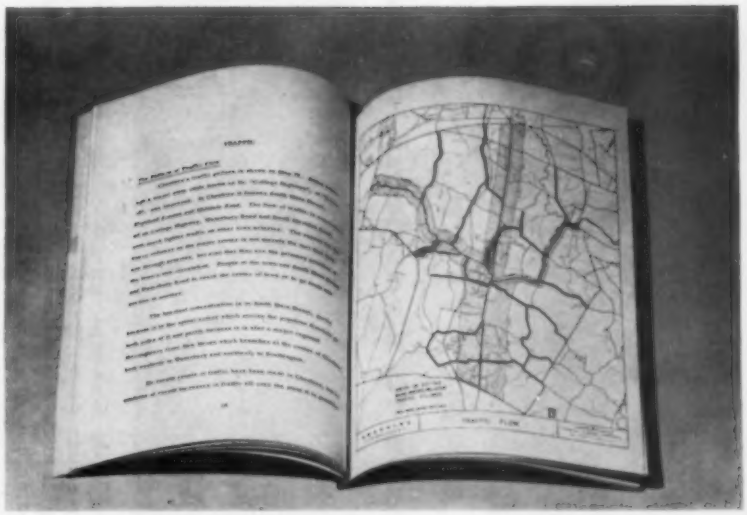
Promotion occupies a large share of the planner's time—probably more than in the usual practice of architecture. It is not always easy for planning commissions to secure adequate appropriations and the planning commissions must be laid out according to available resources. In spite of all the hazards of politics and human nature, which act to slow up the realization of a plan, the members of TPA find great satisfaction in the very fundamental nature of their work which touches the environment of so many human beings.

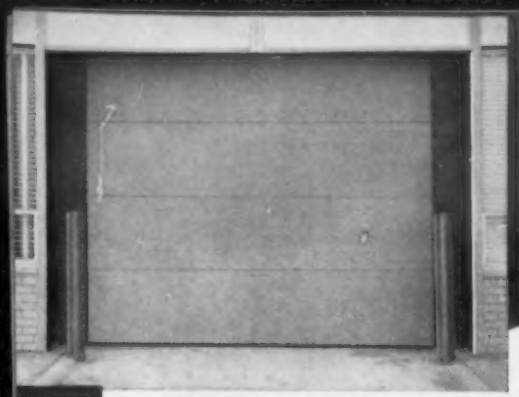
Current principals include: Henry W. Buck, Industrial and Sanitary Engineer; Peter P. Hale, City Planner; Merrill H. Lincoln, Architect; Lawrence Moore, Architect; Douglas William Orr, Architect; John Q. Tilson, Legal Consultant; Tom T. Wuerth and David Kellog.

*Pilot Plan* (below) *outlines basic problems facing town, and points toward possible solutions. It is first stage in preparation of Town Plan.*

*Analysis of traffic flow is an important element of Town Plan* (bottom).





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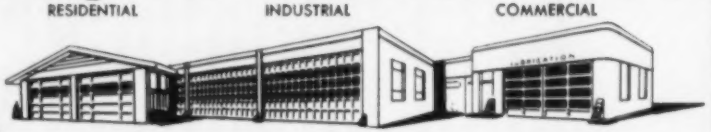

*Delco-matic* GARAGE DOOR OPERATORS

### fearless criticism

*Dear Editor:* A pronounced increase in public appreciation of contemporary design and the architects' role has been taking place since World War II in the City of Melbourne. Certain daily newspapers have been powerful influences in this much-needed change of heart—and I thought P/A might like to hear of some positive achievements to the credit of the Press.

The Melbourne University School of Architecture was established with the generous assistance of one of our dailies, *The Age*. More recently, this newspaper sponsored and financed a Small Homes Bureau which is operated under direct control of our own Institute—and sells house plans and specifications to prospective small-home owners whose resources are too limited for normal professional services. The plans are prepared by Institute members, who get a small royalty on sales, and the scheme has been a resounding success since its inception in 1947.

To publicize this venture, *The Age* devoted a special weekly column to articles written by the Director of the Bureau (an Institute member). These illustrated and described house designs available from the Bureau—and included highly readable articles on related subjects: building techniques, new equipment, finance, and (above all) contemporary design. Out of the universal interest in single-family houses, architecture found in this column a channel for putting its point of view before a wide and diversified public—and it quickly proved popular reading. In free countries, at least, transitions from rags to riches are commonplace; industrial and municipal executives controlling vast building expenditures often graduate from backgrounds devoid of esthetic values—in fact, every citizen is a potential client.

The articles ventured beyond the housing field, into architectural criticism. They attacked despoilers of landscape, praised fine new buildings, and fearlessly trounced bad ones. Quite incidentally, the profession found it had a voice—and the response leaves little doubt that the voice has an audience.

A couple of years ago, the author of these articles, Robin Boyd, resigned from directorship of the Bureau, and they are being continued by his successor. Boyd's success has been noted, however, and he was engaged to write weekly architectural criticism for another Melbourne newspaper, *The Herald*, which has a daily circulation of 450,000 in a population of about two millions. Boyd's column, "Building and Design," is an important feature every Tuesday.

ROY SIMPSON
Melbourne, Australia

*P.S.* I was discussing these matters recently in Palo Alto with your sometime colleague, Ken Reid, and

(Continued on page 14)

SMALL HOMES SECTION

THE AGE, MONDAY, APRIL 9, 1956

The Contract

....it is as important as the chimney

The agreement between a client and his builder to erect a house involves the greatest sum of money ever considered by the client.

The Herald, Tues., April 17, 1956

BUILDING and DESIGN—by Robin Boyd

Out of date—and important

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The proposed new Prudential building to be built in Brisbane.

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ABP

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REINHOLD

(Continued from page 13)

he told me of the impression made at *Pencil Points* just before the War by a small and scurrilous broadsheet called *Smudges*—which grew out of the strong feelings of a student group, over which I then presided, at the total lack of informed public architectural criticism. A great revolution was taking place, a new renaissance was at hand—and nobody cared a hoot! We appointed Robin Boyd as editor and from that impudent and vitriolic school he has emerged as the outstanding architectural writer of this country.

Incidentally, Boyd is expected to be at MIT later this year, as a visiting professor. His subject: architectural criticism. R.S.

*Two-part battery type, one of many in the Halsey Taylor line

Bascom Elementary School, Warren, Ohio
Architect: Arthur F. Sidells, Warren
General Contractor: Campbell Construction Co.

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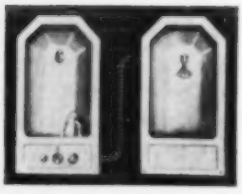
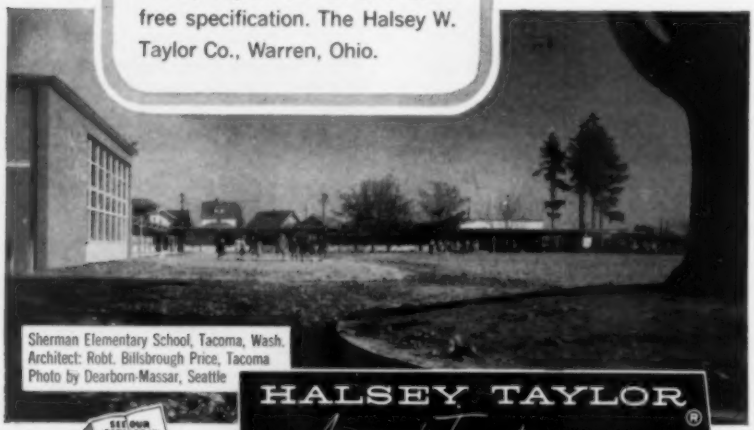


*Recessed vitreous china combination, consisting of wall fountain and modern cuspidor type, popular with schools



Sherman Elementary School, Tacoma, Wash.
Architect: Robt. Billsbrough Price, Tacoma
Photo by Dearborn-Massar, Seattle

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A-63


**proud capital**

*Dear Editor:* The progress report on Chandigarh *(March 1956 P/A)* brings to mind some criticisms of its city plan which I have wanted to express ever since I worked there for nine months, May 1951 to February 1952. I have decided, since, that what has happened was almost inevitable; but there are causes which no article on this new capital has touched upon.

Chandigarh seems to me to be an apt instance of the dictum that in the cities we plan and build can be read the character of our particular society. Critics of Le Corbusier might be inclined to suspect that he has imposed his ideas on the Punjab. This is not true. He has been permitted and encouraged to do what he has done.

But Le Corbusier's plan can be called authoritarian in many respects. Why was such a plan permitted in a newly independent and supposedly democratic India? Who encouraged Corbu?

Here is one answer: India is aiming at democracy but has been sustained, and has avoided chaos, partly by the efforts of the present adult generation of British-trained administrators. These men love India, even the memory of Gandhi, but they were not followers of Gandhi. While Gandhi crusaded, they were being trained in British techniques of administering the internal affairs of an underdeveloped country and incidentally acquiring British Colonial attitudes as to the "social position" of Government.

Two such British-trained Indians were responsible for Chandigarh: P. N. Thapar, an administrator, and P. L. Varma, an engineer trained in the British Public Works Department. (Varma is shown in the photo with Corbusier. I believe Thapar has gone on to other, larger responsibilities.)

Thapar and Varma, with the sup-

(Continued on page 16)



p/a views

# TALK ABOUT BELOW GRADE MATICO TILE INSTALLED 100 FEET UNDERGROUND

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Look at the photograph above of Pixley's reception room. Notice the dramatic use of the natural limestone column for the far wall. Ceiling, too, is natural limestone. The Company refers to its headquarters as "an object lesson for industrial firms who will later use the area". This unusual project has completely modern facilities for living and working, is completely comfortable. Pictured at the left is Pixley's attractive walnut panelled main office. It's hard to believe this bright, spacious office with its "picture window" is 100 feet underground!

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(Continued from page 14)

port of several successive governors of the Punjab, undertook to plan and build a new capital city. It would be interesting to hear from Albert Mayer just why his firm did not continue with the planning of Chandigarh. There are doubtless various reasons, but it seems likely that one of the basic ones was that their approach was not authoritarian enough, their manner not grand enough, to suit Thapar and Varma, both of whom quickly developed great confidence in and admiration for Le Corbusier.

Thapar and Varma first engaged Fry & Drew, who accepted on condition that Le Corbusier be engaged as chief architect and planner. Pierre Jeanneret was also engaged as a "senior architect" partner of Fry & Drew.

For Corbu, the situation was made to order. It was as sympathetic as he could ever expect to find. The Punjab Government was ready to accept the kind of plan that he wanted to give it—a plan which can be described in one way as a veritable diagram of an hierarchical and authoritarian society.*

Government is glorified in a vast estate against the hills. Only the Governor and his retinue live up there. The daytime population of this estate will be enormous—many thousands of servants, office boys, clerks, small and big officials, legislators, judges, all flocking in from the "body" of the city to work in the high court, the secretariat, the assembly. According to the plan, the poorest of these will have the farthest to come, for immediately below the Government estate come the villas of high officials and people of wealth who can afford large building lots. Next come medium-sized lots, and so on. I do not say Le Corbusier proposed this class-conscious layout, but I doubt he raised any strong objection to it.

The poetical metaphor likening the city to a human body with head, heart, lungs, arms, and so on, is amusing because it is precisely the kind of pseudo-Brahminical symbolism I have encountered elsewhere in India. And it is no better a justification for a city plan than it is for the site plan of a school. Hundreds of years ago, Hindu temples were supposedly laid out in this manner; but should a modern secondary school be laid out so? Or a modern city? A city had better have a city's form.

Highways must have strong emphasis in any modern city plan but this does not necessarily preclude the use of graceful curves to add interest to the experience of road use. The rigid severity of the main highway grid at Chandigarh seems arbi-

(Continued on page 22)

* *To quote from Corbu's official account: "Six weeks after the arrival of the Counsellor, Le Corbusier, and the architects at Chandigarh, the smallest details of the life of the city had been decided, and plans produced".* (A characteristic statement!)


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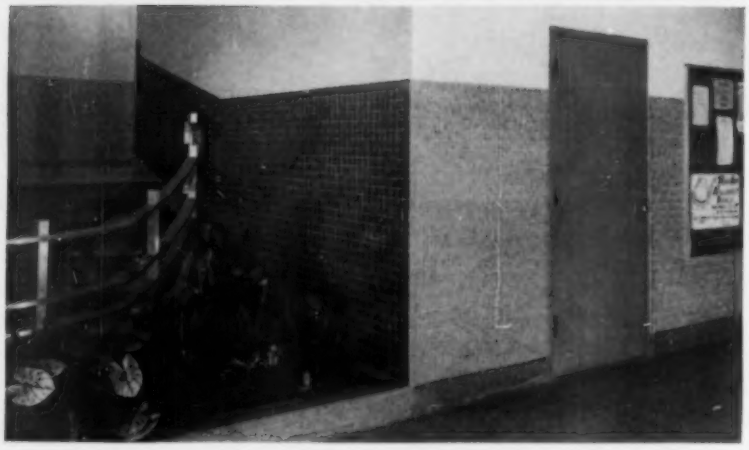

Hopkins, Minnesota, Sr. High School, Bissell & Belair, Archts., Minneapolis, Minn.

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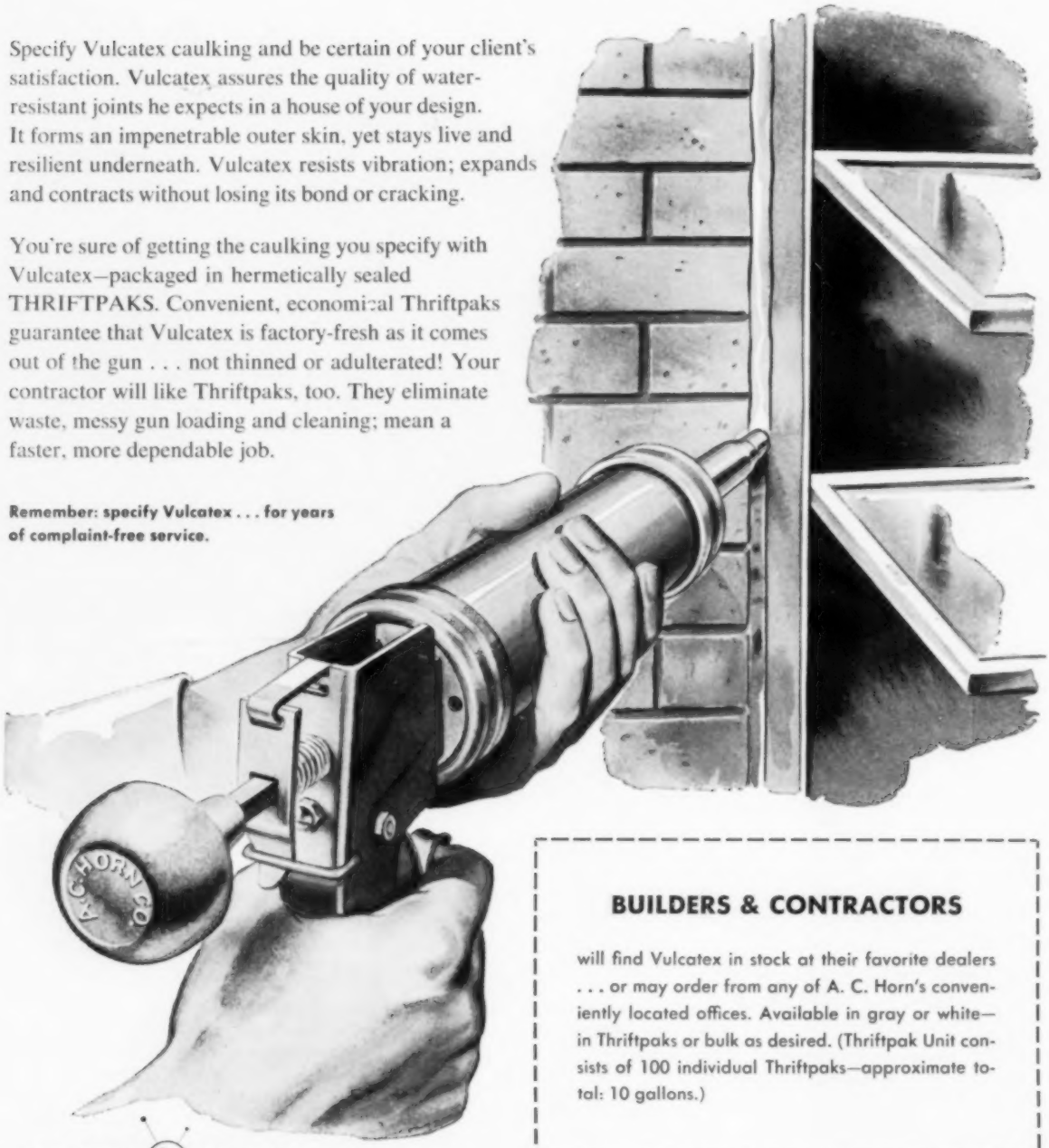


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Prudential Insurance Company, Minneapolis
Magney, Tusler & Setter, Architects

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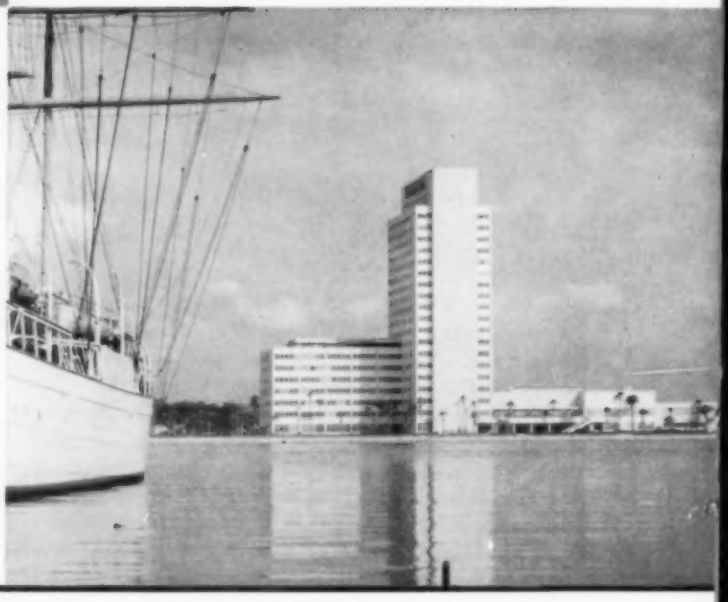

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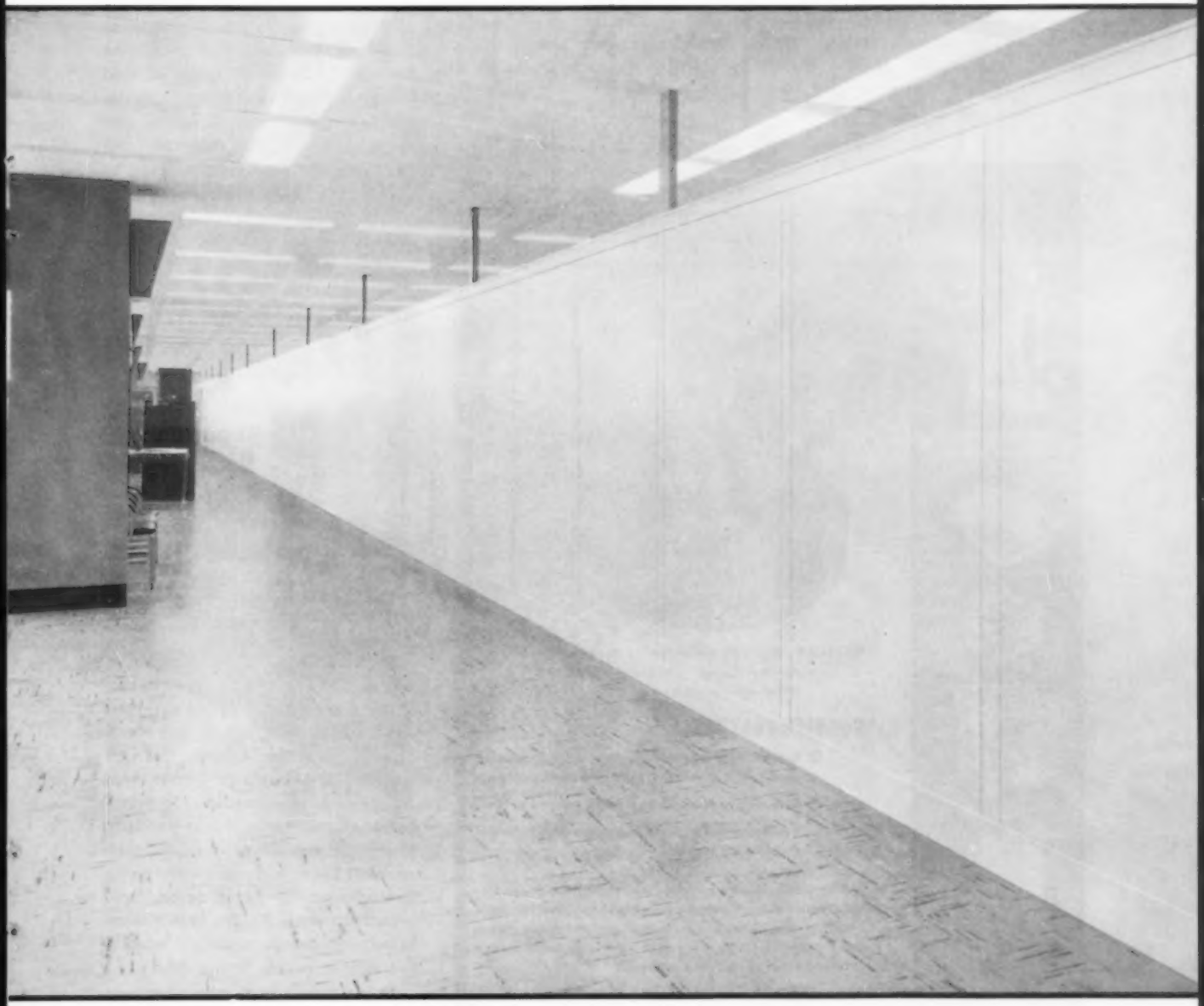

(Continued from page 16)

trary. It should function efficiently, however—it is certainly needed in so compartmentalized a city plan.

Government is the chief industry of Chandigarh, but Government is set apart. A large central business district was planned and can be found in the printed plan at the lower right corner of the main super-highway intersection. This center is about 1½ miles from the Government estate, a considerable distance in a city of this size. Manufacturing and industry are segregated in still another peripheral zone. These areas seem too far dispersed, even if transportation were as easy as it might be in America with a similar city plan and a car for every worker. In India, it will be a long time before one employe in a hundred has a car. The price of a bicycle was equal to eight to ten months of a servant's or sweeper's salary, when I was at Chandigarh.

Locally in the Punjab, in 1951-52, there was plenty of criticism of Chandigarh. Why not bring the capital to an existing town — to Simla or Ambala? Why take good farm land? Why not spend all that money on rural electrification or irrigation or to build hospitals and schools? Why a site removed from main highway and rail routes?

Later, elsewhere in India, I found pride in Chandigarh—in the idea of a grand new capital. And now I realize there was considerable pride in Punjab, too. Chandigarh has become one of the many new symbols of independent India, and its importance as such is quite separate from the functional faults and virtues of its plan. I suspect any society, and particularly a newly independent country, needs and wants proof of its own creativity and capacity for growth. This need Chandigarh helps to satisfy. We shall be watching its growth for the rest of our lives.

Le Corbusier also must find in Chandigarh the satisfaction of one of his emotional needs: the need to play the role of hero-architect. It is a remarkable and provocative performance at least, in both planning and architecture; but it is an old-style performance, because the self-centered and egotistic genius type (a western phenomenon) is disappearing as an ideal, thanks partially to modern psychology. In Asia, such an ideal never had much currency—in India, or in Japan, exceptional artistic talent has often been related to sainthood—the artistic "genius"—a simple, happy, loving man.

It is interesting to remember that the modern planning method that seems most appropriate and effective in "Western Democracies" has developed from the method initiated in India by Patrick Geddes, whose reports on Indian cities are still immensely instructive to read.

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MODEL 7W. Strikingly new in lifetime stainless steel. Flowing curves completely hide supply and waste fixtures... blend with modern styling.

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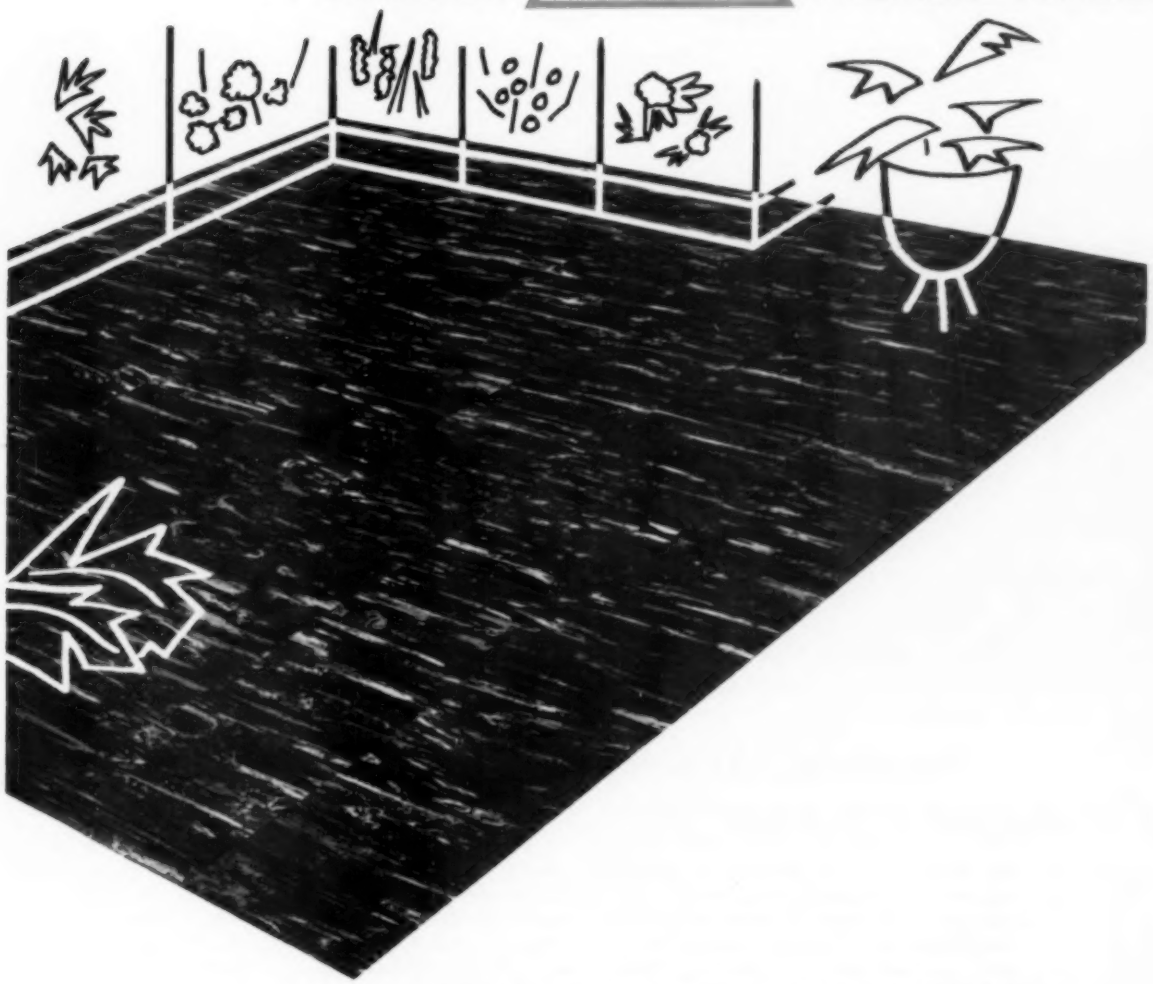
# Say it with floors

## . . colorful AZPHLEX® marble tones



Where beauty is on sale, back it up with a selling *floor*. Azphlex Marble Tones, in light, clear colors . . in fresh, interesting design combinations make a perfect display floor for product or service sales.

This new and better flooring is *vinylized* to give it extra stamina to withstand extra traffic and wear . . to resist spilled or tracked-in greases and oils. It also means a smoother, tighter surface that's easy to clean, economical to maintain. Azphlex Vinylized Tile costs a bit more than asphalt tile, gives much more beauty and service. Discover the decorative possibilities in Azphlex . . write for samples, color chart and complete information.

*Pattern shown: Charcoal*

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Andrew Jackson Elementary School, Norman, Oklahoma. Architects: Caudill-Rowlett-Scott and Associates, Oklahoma City. Contractor: Builders Construction Company, Inc., Oklahoma City. Windows: Lupton Architectural Projected.

## No Walls . . . just Lupton Metal Windows

Here is an ultimate in "open plan" buildings. Almost literally, this new school has no walls, just window after window and each is a Lupton Metal Window.

The roof, with wide overhang to give full sun protection during school hours, is supported by steel columns. Lupton Architectural Projected Windows make the non-load bearing "walls." Open-in ventilators at the sill assure ample ventilation. Here is modern design in its simplest, most functional form. The Lupton "walls", precision engineered, were designed and built with fifty years' metal window manufacturing experience.

For your next commission, investigate Lupton Windows. You'll find high quality, moderately priced through advanced manufacturing techniques. See them in Sweet's. And while you're looking, check Lupton Simplified Curtain-Walls — the modern, logical way to better buildings. They offer savings in construction time, complete design flexibility and lowest possible upkeep. We'll be glad to send complete information on Lupton products — steel and aluminum windows, and the Lupton Simplified Curtain-Wall System.

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# ...for a touch of Glamour that lasts and lasts!

*Young Miss Department of Snellenburgs of Philadelphia—one of two large areas floored with ⅛" "Sequin" linoleum in a big store modernization program.*

## NEW, EXCLUSIVE Gold Seal SEQUIN® ⅛" INLAID LINOLEUM

Now, with new ⅛" "Sequin" linoleum, you can offer commercial clients a truly luxurious, high styled heavy-duty floor. Here is rich, beautiful coloring . . . a terrazzo type design that fairly scintillates before the eye . . . excellent resilience – for exceptional quiet and comfort underfoot. Seven decorator colors provide ample selection for matching *any* decor.

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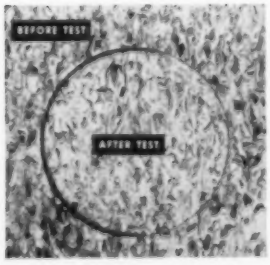
**SPECIFICATIONS:** 6-ft. wide yard goods. ⅛" gauge, burlap backed. Install over suspended wood or concrete subfloors. Available in: Grey mix, Grey, Green, Dark Brown, White Multi, Taupe, Beige. Also made in standard gauge for residential use—in 16 colors.

**Abrasive Wheel Test proves "Sequin" will "look like new" through long service life!**




The circular "After Test" area is the result of applying the abrasive wheel to the "Sequin" sample. See how it has worn *well through the linoleum*— and yet the pattern is still there, as clear and sharp as ever! Compare it with the "Before Test" area. You can't tell the difference! Write to Architects Service Department, Gold Seal Floors and Walls, Congoleum-Nairn Inc., Kearny, N. J., for further information.

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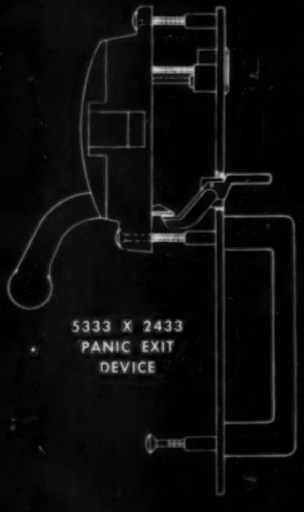

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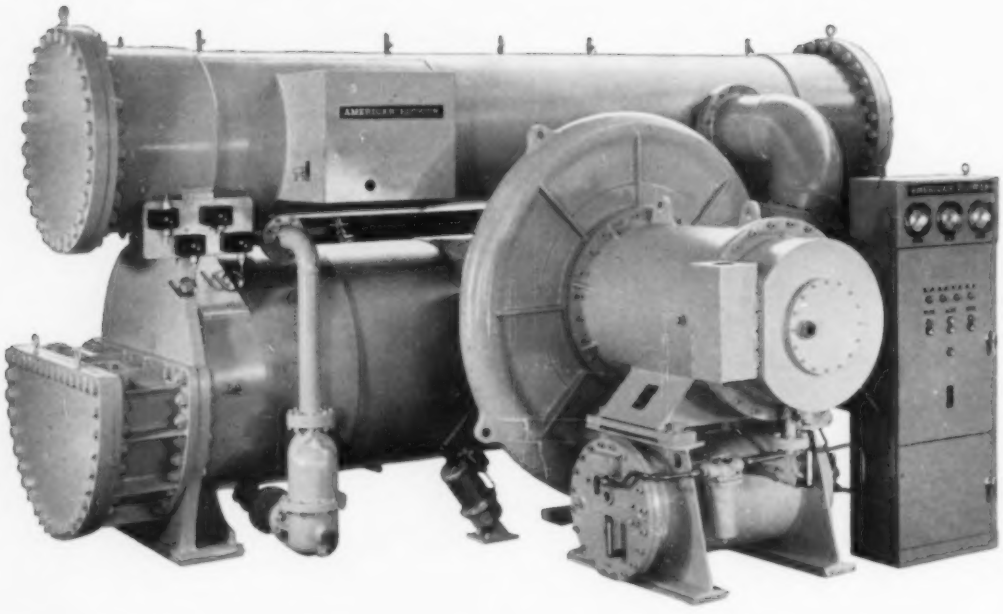
AMERICAN BLOWER
AIR CONDITIONING



# Tonrac* maintains chilled-water temperature–regardless of load!

American Blower's single-stage hermetic centrifugal refrigerating machine – Tonrac – automatically adjusts refrigerating capacity to cooling needs. "Tracking the load," Tonrac operates efficiently from full load to no load.

Variable inlet guide vanes regulate the quantity, velocity and direction of the refrigerant gas flow to the compressor in direct response to the amount of cooling load.

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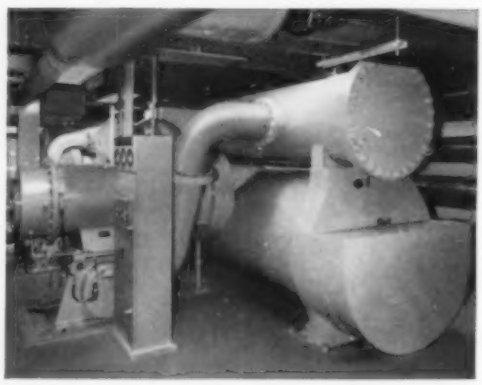
What's more, Tonrac's *single-level* construction requires no built-up bases. A compact, self-contained unit ready for installation, Tonrac may be located wherever the floor will support the charged weight of the system – even on the roof.

For further information on Tonrac, contact our nearest branch office, or write us direct. American Blower offers a complete product-line – from Packaged Air Conditioners, to Multi-Zone Units and Central Station Air Conditioners – to meet *all* your air conditioning requirements! American Blower Corporation, Detroit 32, Michigan. In Canada: Canadian Sirocco Company, Ltd., Windsor, Ontario.



Compactly designed, accessible – Tonrac operates on constant-speed 3600 rpm motor. Push-button control (left foreground) initiates quiet, efficient, automatic operation.

*TRADEMARK

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Division of AMERICAN-Standard

**Air conditioning equipment for every business**

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Front facade and side returns are Architectural Terra Cotta units sized from 24" x 24" to 24" x 33".

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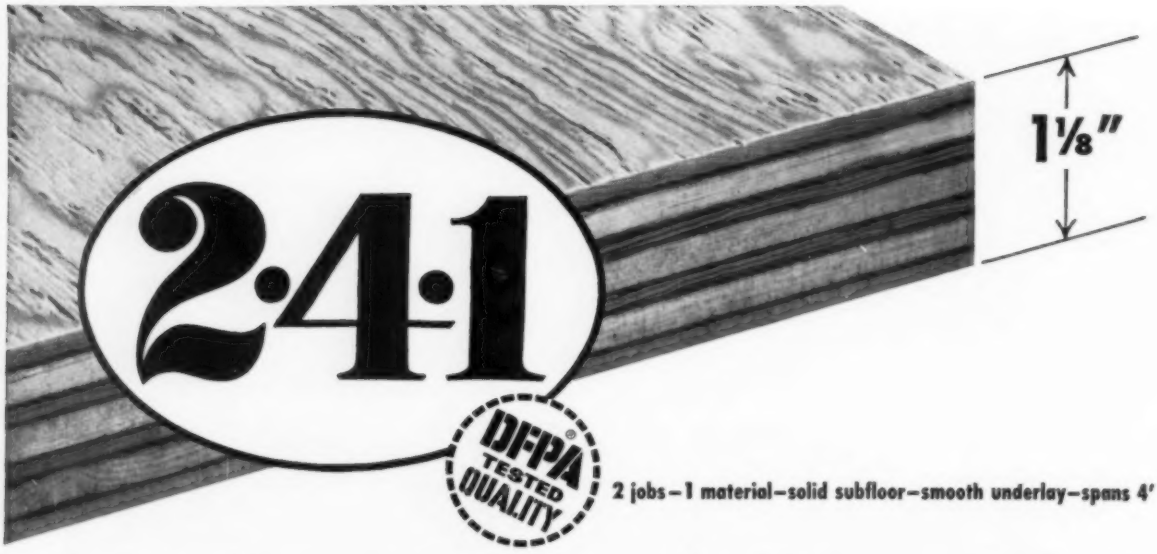


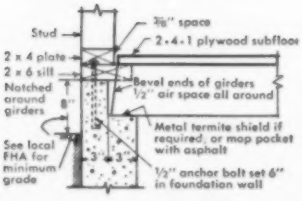

# *Revolutionary new plywood subfloor-underlay*

# "saves up to $500.00 per house"

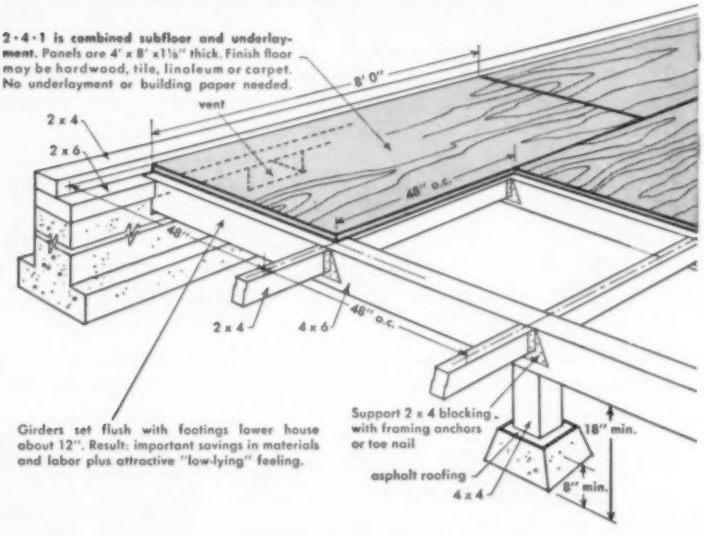
**"The new 2·4·1 panel and girder system** saves us up to $500.00 per house over shiplap and joist construction," reports Ken Larsen, president Continental Construction Co., Seattle.

"Cost studies show two kinds of savings. First, in labor and materials on the floor itself. Second, contingent savings on heating and plumbing contracts, plus lower costs on sheathing, siding, painting, concrete steps and landing, due to 12" less exterior wall height."

The exact amount you can save with new 2·4·1 plywood depends on local costs and the type of construction you are now using. But whether it's fifty or five hundred dollars, 2·4·1 panel and girder floors *will* save money . . . provide truly superior construction . . . give your houses a "close to the ground" look previously possible only with slabs. Write for proof.

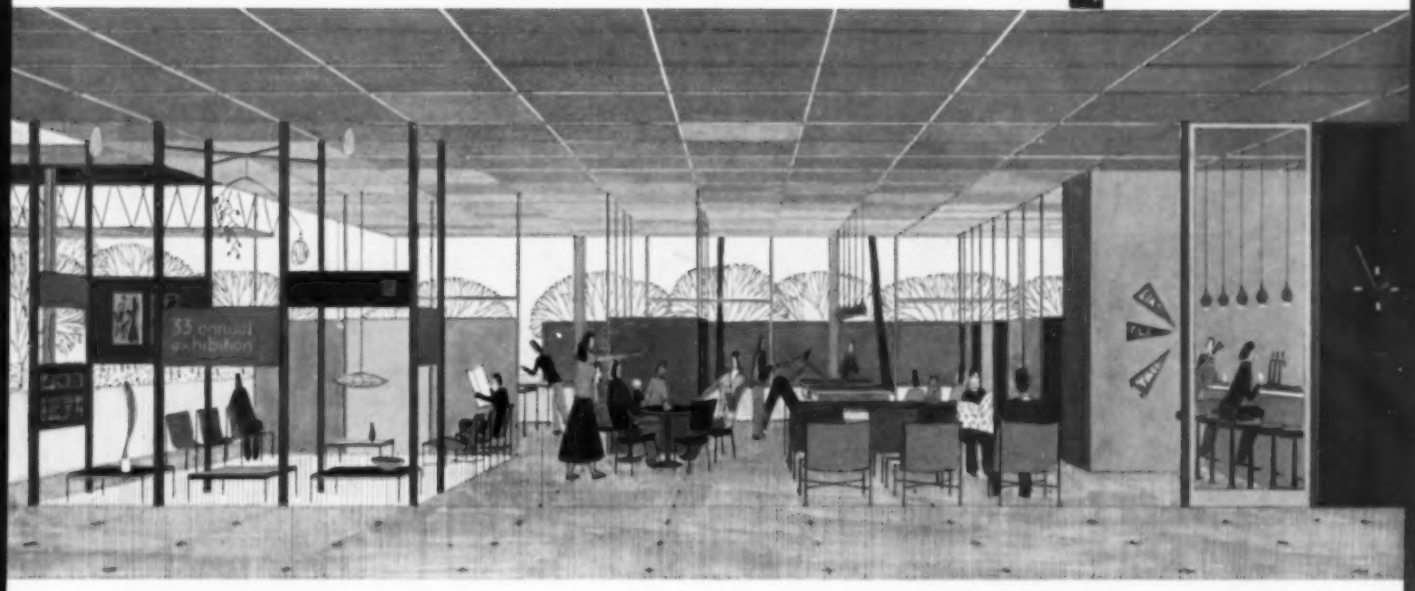

Stud
2 x 4 plate
2 x 6 sill
Notched around girders
8"
See local FHA for minimum grade
⅛" space
2·4·1 plywood subfloor
Bevel ends of girders ½" air space all around
Metal termite shield if required, or mop pocket with asphalt
½" anchor bolt set 6" in foundation wall

**2·4·1 is combined subfloor and underlayment.** Panels are 4' x 8' x1⅛" thick. Finish floor may be hardwood, tile, linoleum or carpet. No underlayment or building paper needed.


8' 0"
vent
2 x 4
2 x 6
48" o.c.
48"
2 x 4
4 x 6
48" o.c.
Girders set flush with footings lower house about 12". Result: important savings in materials and labor plus attractive "low-lying" feeling.
Support 2 x 4 blocking with framing anchors or toe nail
asphalt roofing
4 x 4
18" min.
8" min.

**FOR MORE INFORMATION, write Douglas Fir Plywood Association, Tacoma 2, Washington**

# *Community center for* youth . . .




Community Youth Center designed by Henry S. Brinkers, Urbana, Illinois, awarded Grand Prize in the recent Porcelain Enamel Design Competition conducted by Architectural Forum and sponsored by Ferro Corporation.

Porcelain enamel applications include movable wall panels, Mullion bars, perforated acoustical ceilings, door and window frames, electric raceways.

What better way to capture the very feel and spirit of youth than with gay, lighthearted *color!*

But how to apply that color most functionally, with an eye on maintenance in the years ahead?

*Porcelain enamel* on steel or aluminum provides a happy solution. Any colors you want . . . inside and out. Permanent colors that do not fade, require no maintenance. All with glass-hard surfaces that are impervious to weather, cannot stain or scratch—wipe new with a swish of soap and water.

Think of color—*carefree* color—in the buildings you design. Send today for illustrated 22-page reprint of *Architectural Forum* article, "25 Prize Buildings for the Community." Shows interesting applications of Porcelain enamel in award-winning schools and community buildings.

Ferro fabricates no building materials, but as a leading supplier of raw materials, pioneers new products and end-uses for Porcelain enamel.

FERRO

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*Colorful, Carefree Porcelain Enamel*

Approved plans for the SAN-JIL APARTMENTS now nearing completion in Chicago will feature Armorex Paneling for Spandrels. Milton M. Schwartz is the architect.

# NEW DESIGN FREEDOM

## ...with Englander *Armorex**

### translucent building panels

Spandrels, curtain-walls, skylights, stained glass applications ... these are a few of the many exciting uses for which Armorex is especially suited.

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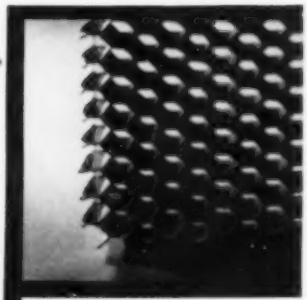

*For full information on the characteristics and applications of Armorex write:*

*TM Pending

Several choice territories are still open on an exclusive basis to suppliers and distributors of building materials. For complete information wire or write.

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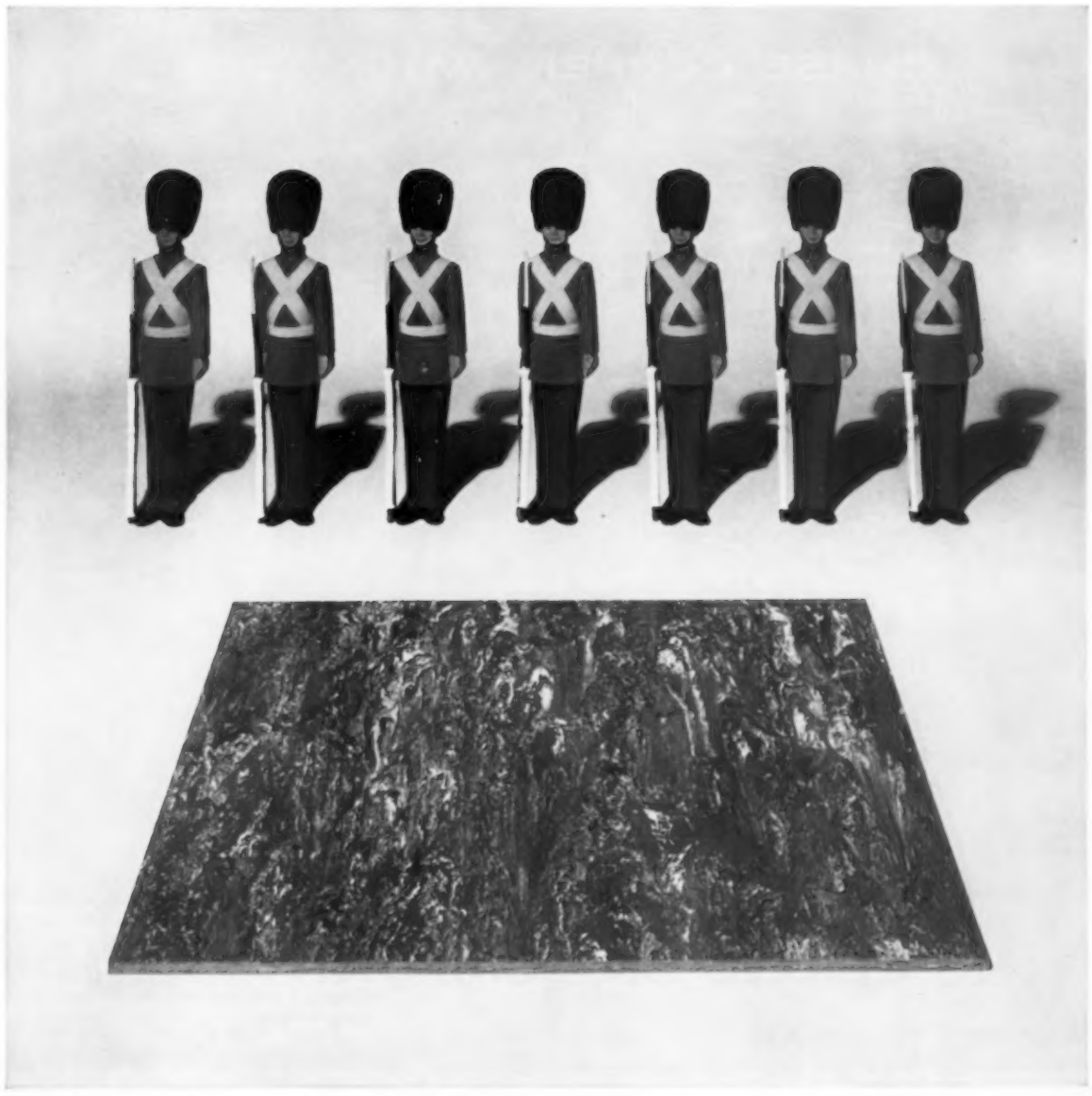

# Precision in floor tile manufacture

Accurate micrometer checks are made on each run of tile manufactured by Kentile, Inc. This is just one step in the precision control process that assures you of the uniform thickness and quality you demand in the flooring you specify. Other controls guard the analysis of raw materials, mixing, proportioning, rolling and other manufacturing processes. This results in finer floor tile that is accurately cut, clear and true in color; it is always smooth surfaced and made for utmost durability. That is why the Kentile, Inc. line has become the world's most popular line of resilient floor tile. Tile illustrated is *Blue Belge*, one of the many beautiful colors in the KenRubber line.

**KENTILE, INC.** America's largest manufacturer of resilient floor tiles

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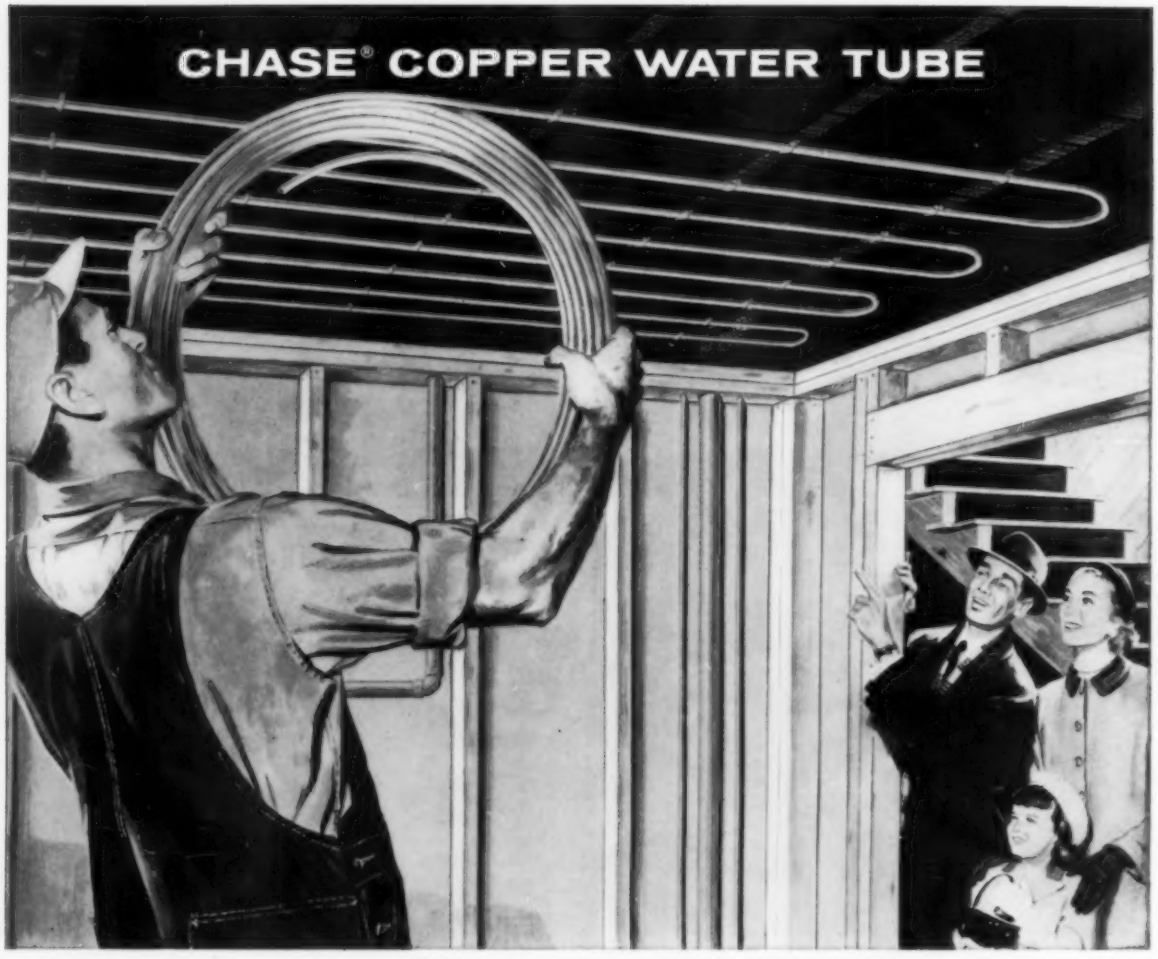


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**But, plenty of ceiling on cost!**

That's because lightweight, easy-handling Chase copper tube for radiant heating *installs faster!* Perfectly tempered, it easily unrolls into position on ceiling or floor. Comes in long 60 and 100-foot lengths that result in fewer joints. Connections are quickly made with simple soldering techniques.

**Even the rugged carton** for Chase copper water tube is designed to speed handling...save time! It's color-coded for easy identification of type and size. Has a center hole big enough for a firm grip. Can be stacked, rolled or carried with ease!

**Proof that Chase** copper water tube cuts installation time is the fact that it is being used in many of the largest housing developments where over-all costs *must be low!*

If it's radiant heating, be sure the system is made with Chase copper tube and solder-joint fittings.

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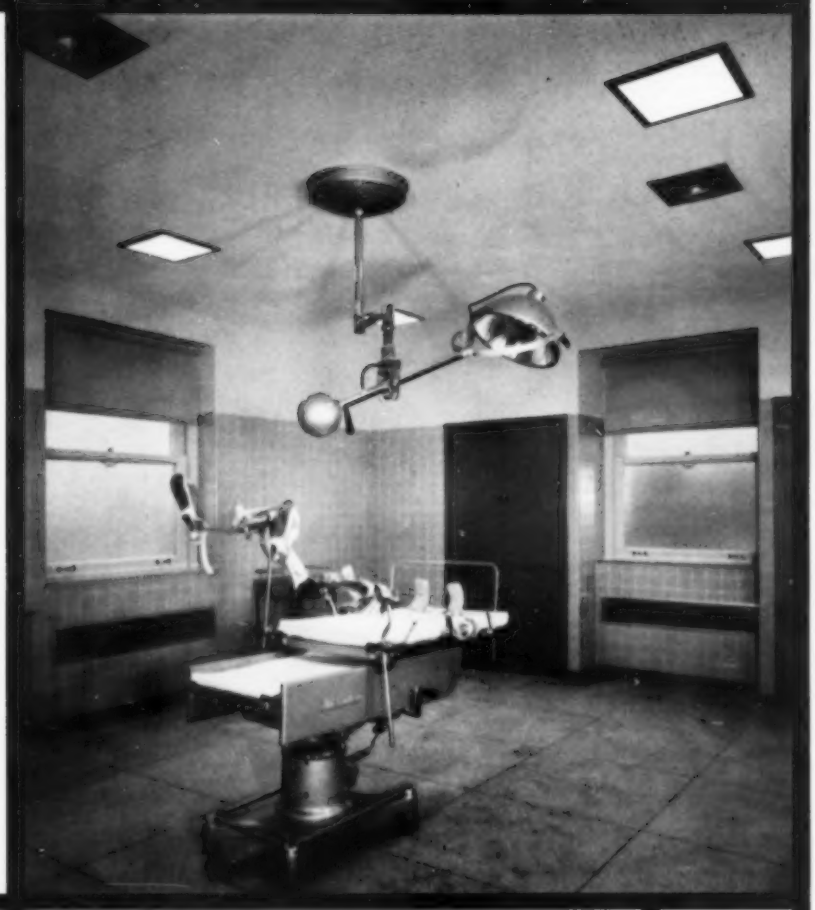


*A new high in*

# high velocity for hospitals

New wing of Abington
Memorial Hospital, Abington, Pa.

Architects & Engineers:
Jack Steele Company, Philadelphia, Pa.
Schmidt, Garden & Erikson, Chicago, Ill

Air Conditioning Contractors:
Huffman-Wolfe Company,
Philadelphia, Pa.
Paul A. Norair, Washington, D. C.

▲ To provide draftless air diffusion in the delivery room, All-Air High Velocity units are placed under the window. High velocity sound attenuation chambers with square diffusers are mounted in the ceiling. *Turn page for detail.*

▼ In the nursery for premature infants, sound attenuation chambers with square air diffusers are mounted in the ceiling. *Turn page for detail.*

▲ All-Air High Velocity under-the-window units are used in all private and semi-private patients' rooms. *Turn page for detail.*

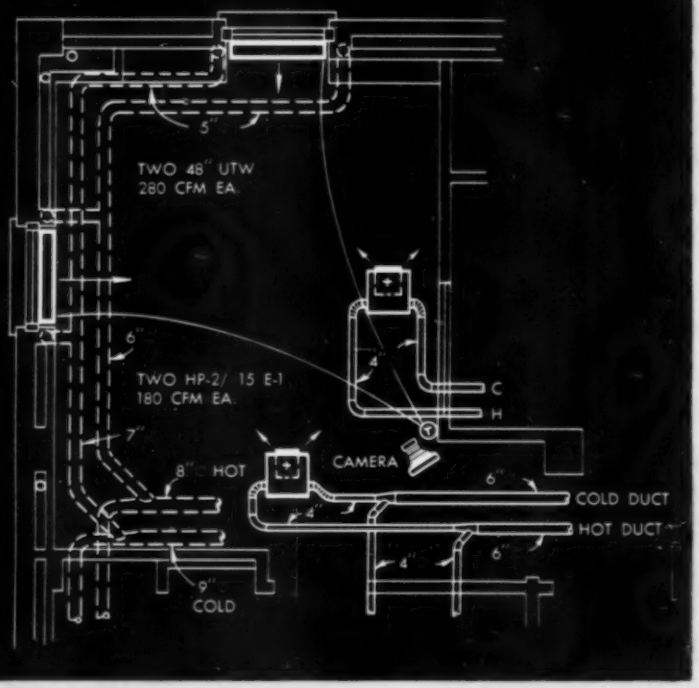
Here are shown applications of the Anemostat All-Air High Velocity air distribution system in the new wing of the Abington Memorial Hospital.

The trend towards Anemostat All-Air High Velocity Systems is growing rapidly. The Anemostat All-Air High Velocity air distribution system can be used with smaller than conventional ducts. It can be installed faster and at less cost. It requires no coils, thus eliminates leakage, clogging and odors. These units save space when installed in hospitals, office buildings, department stores, banks, schools, factories and other structures.

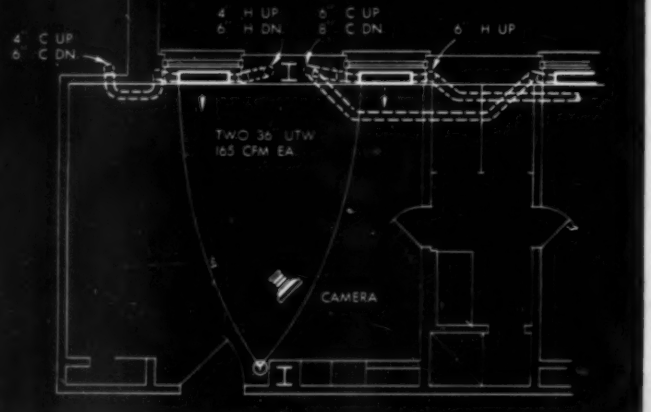
**ARCHITECTS—Attention Please:**
Anemostat round, square and straightline diffusers with high velocity units complement a wide variety of architectural designs.

Write on your business letterhead for 1956 New Products Bulletin and Selection Manual 50

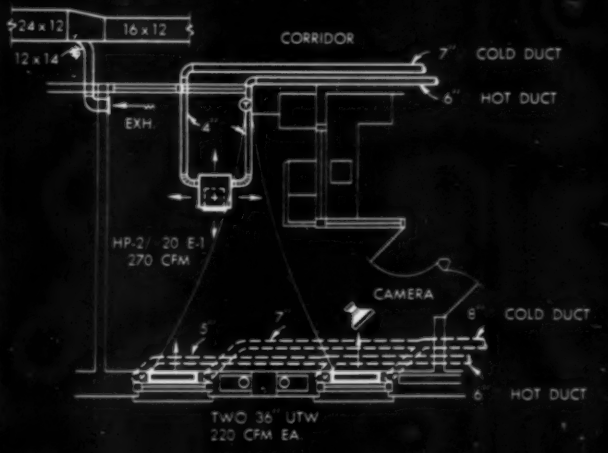
## Delivery room




## Patients' room




## Premature Nursery

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**DRAFTLESS** *Aspirating* **AIR DIFFUSERS**

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**REPRESENTATIVES IN PRINCIPAL CITIES**

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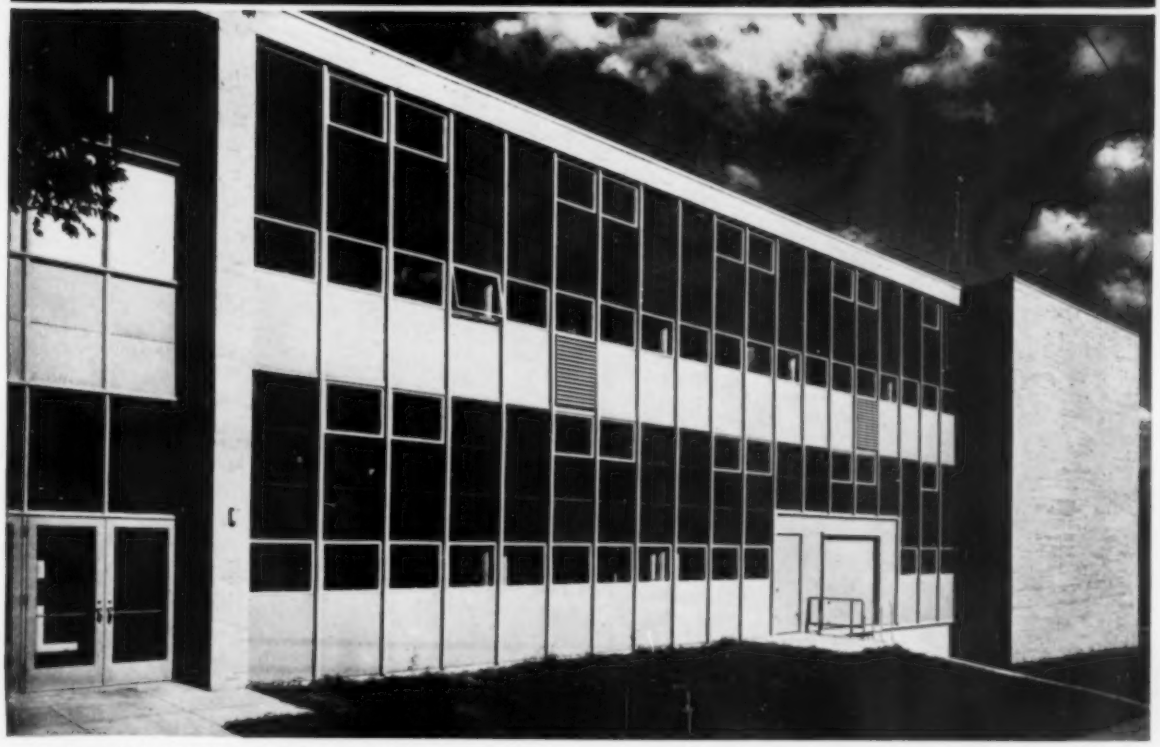
*Since* HOPE'S *1818*

# WINDOW WALLS

STEEL WINDOWS HAVE THE STRENGTH AND RIGIDITY THAT NO OTHER WINDOW CAN MATCH



*Industrial Arts Addition, West Junior High School, Kansas City, Missouri*

*Architects—Curtis and Cowling*
*General Contractors—Bennett Construction Co.*

HOPE'S MULTI-STORY WINDOW WALLS used in this handsome school addition point up the flexibility of this type of building enclosure.

The facade shown includes fixed glazed areas, ventilators, louvers, insulated steel panels and an entrance. These elements may be located wherever desired to suit the architectural plan and requirements of the building.

Other important benefits to the architect and builder through the use of Hope's Window Walls include rapid building enclosure permitting work to progress even in inclement weather and economies in both construction cost and space gained. In addition, the unsurpassed strength and rigidity of Hope's Steel Window Walls provide extreme long life with only a minimum of maintenance required.

*For full information, write Dept. PA for Hope's new catalog 152 on Window Walls.*

## HOPE'S WINDOWS, INC., *Jamestown, N. Y.*

THE FINEST BUILDINGS THROUGHOUT THE WORLD ARE FITTED WITH HOPE'S WINDOWS

## This fine Nebraska school gets

# More classroom comfort per

Senior High School, Grand Island, Nebraska. Superintendent of Education: Dr. Earle Wiltse; Architect: F. N. McNett Company; Engineer: R. L. Fickes; Mechanical Contractor: J. L. Lingeman Company. The design resembles a human hand, with the administrative areas concentrated in the "palm" and classrooms extending down the four fingers.

### Firsts in classroom comfort by Herman Nelson!

- *the first practical, high efficiency HOT WATER heating element for unit ventilators.*
- *DRAFT|STOP, the first unit ventilator to eliminate window downdrafts—without increasing heat load.*
- *LIGHT|STOP, the first accessory to adapt the unit ventilator to audio visual classrooms.*

**AND NOW—**

- **HerNel-Cool** *first AIR CONDITIONING UNIT designed, built and priced specifically for schools.*

**BETTER AIR IS OUR BUSINESS**

Illinois Steam Heating Specialties

Herman Nelson Console Heaters

HerNel-Cool Air Conditioner for schools

# dollar with DRAFT|STOP!*

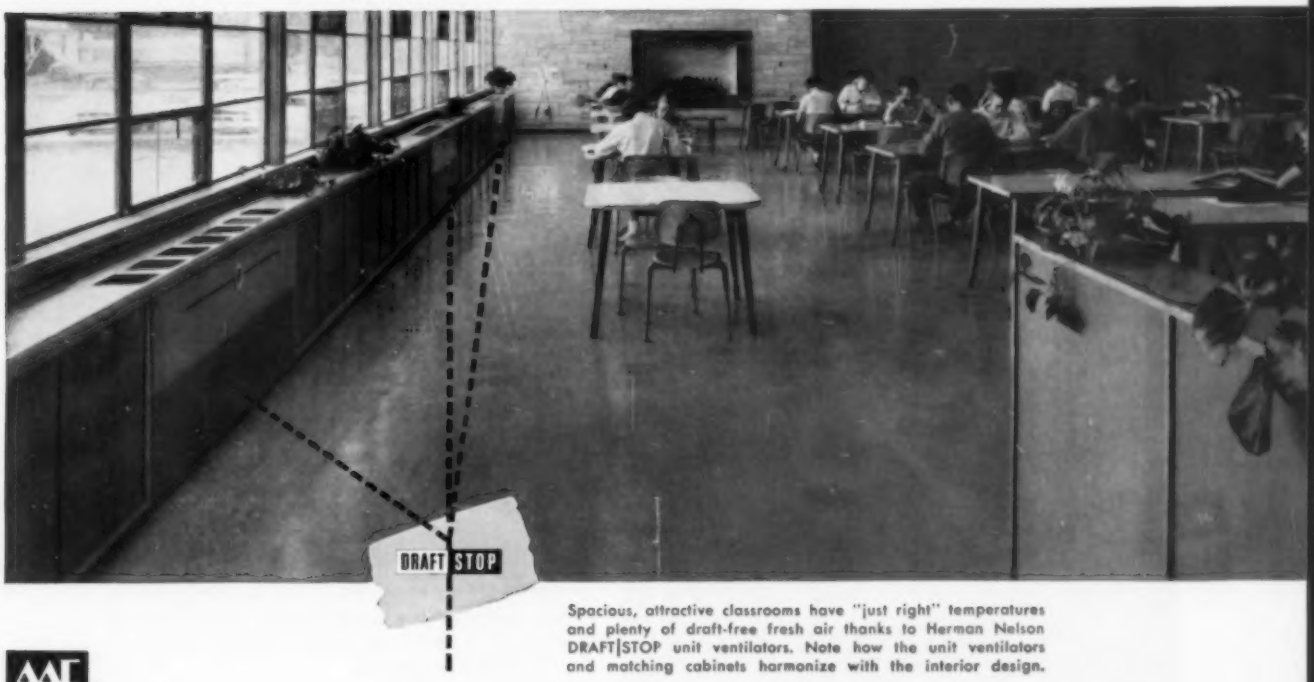
## Controls drafts without added heat load

The new Senior High School at Grand Island, Nebraska is recognized as an architectural and engineering "jewel". The finest, most modern equipment combines with excellent planning to create the last word in educational facilities.

It was natural that DRAFT|STOP was selected for the all-important job of cooling, heating and ventilating the classrooms. DRAFT|STOP heats only when heat is necessary . . . *saves* fuel when it is not. It controls downdrafts without added heat load. It's unique design provides a constant supply of properly *heated* or *cool* fresh air . . . automatically compensating for temperature changes. Pupils are alert and comfortable from the opening of school to the closing bell. Teachers are free to concentrate on *teaching*—in a healthful atmosphere that is conducive to *learning*.

That's why there is an ever increasing demand for *more classroom comfort per dollar* . . . the DRAFT|STOP way! Want more facts? For a 16 page case study, write to Herman Nelson Unit Ventilator Products, American Air Filter Company, Inc., Louisville 8, Kentucky.

**Patented (there are no substitutes).*




Spacious, attractive classrooms have "just right" temperatures and plenty of draft-free fresh air thanks to Herman Nelson DRAFT|STOP unit ventilators. Note how the unit ventilators and matching cabinets harmonize with the interior design.

AAF

*herman nelson*

UNIT VENTILATOR PRODUCTS

*System of Classroom Cooling, Heating and Ventilating*

AMERICAN AIR FILTER COMPANY, INC.

Herman Nelson Heating, Ventilating Units

Herman Nelson Unit Blowers

Herman Nelson Horizontal Unit Heaters

AAF Dust Control For School Shops

Herman Nelson Vertical Unit Heaters

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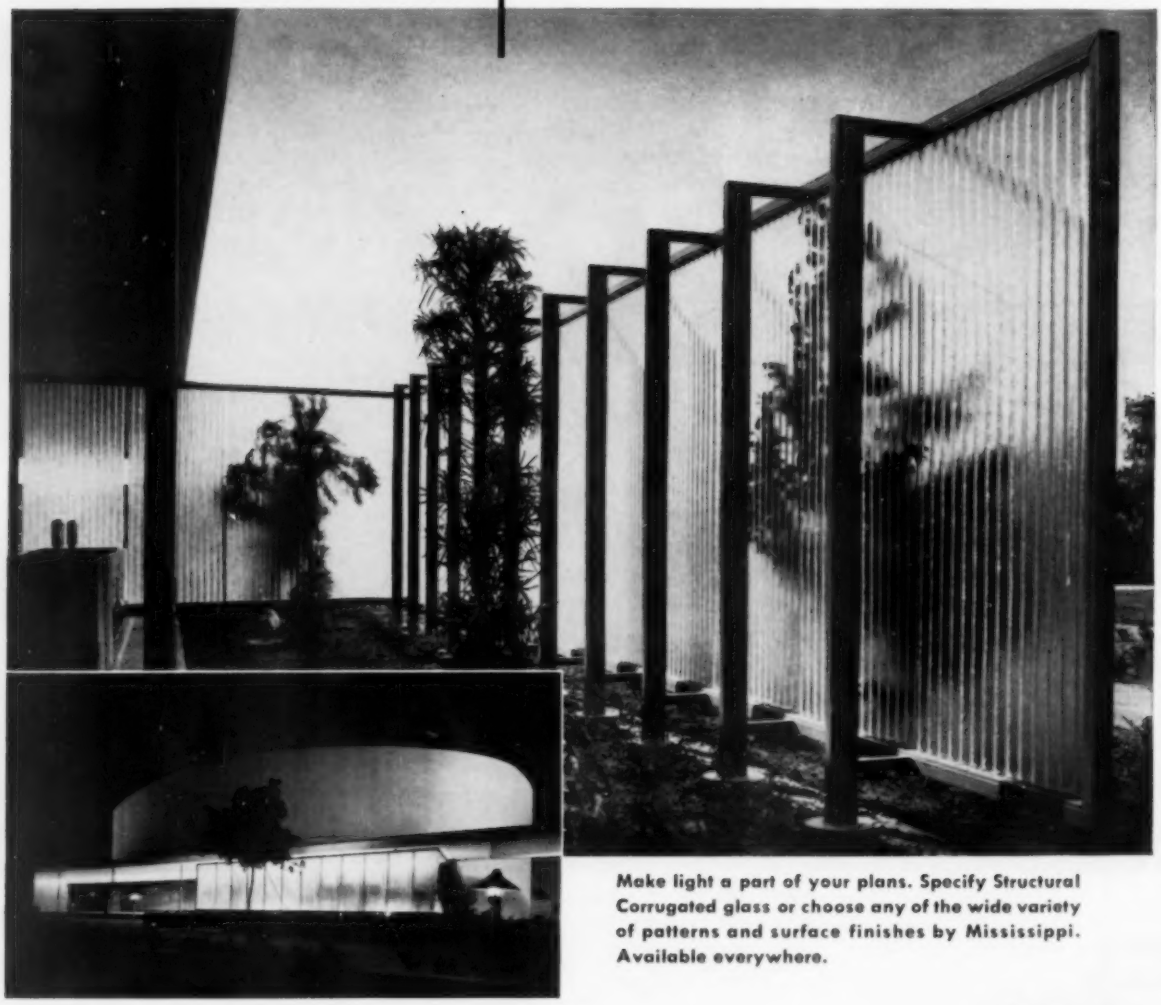
## Structural Corrugated Glass Enhances Exterior . . . Screens Interior of College Building

Architect Richard J. Neutra has achieved an exterior treatment as dramatic as a Broadway hit with this striking installation of rhythmic, translucent Structural Corrugated glass. This modern material, rapidly gaining favor in contemporary structures, is an accomplished performer in daylighting. It effectively screens with light instead of darkness . . . floods protected areas with softened, diffused daylight. Translucent without being transparent, Structural Corrugated glass protects privacy beautifully. Practical as well as pretty, it lends itself especially well to today's designs and needs.

Speech Arts Bldg., Orange Coast College, Costa Mesa, Calif.
R. J. Neutra & R. E. Alexander, Architects.
Richard H. Pleger, Supervising Architect.
Thompson Paint & Glass Co., Glazing Contractor.



**Make light a part of your plans. Specify Structural Corrugated glass or choose any of the wide variety of patterns and surface finishes by Mississippi. Available everywhere.**

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WORLD'S LARGEST MANUFACTURER OF ROLLED, FIGURED AND WIRED GLASS

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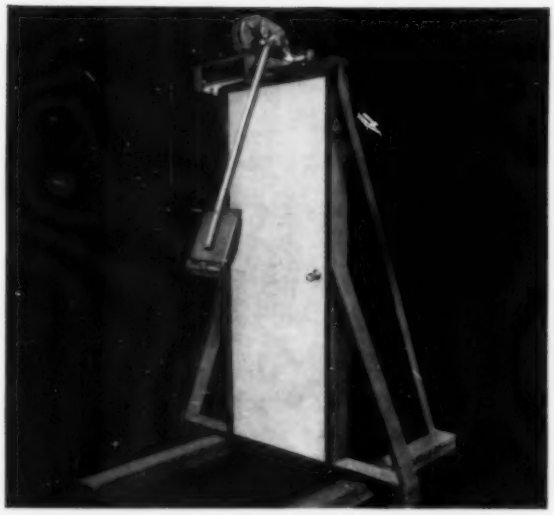

**Proved by 529,879 bangs**

This pendulum banged a 35-pound weight against a Curtis New Londoner hollow-core door 38 times per minute. After 529,879 bangs, door was good as new.

**Proved by 642,934 slams**

Slammed 72 times per minute—the equivalent of a lifetime of slamming—the Curtis New Londoner door came through this tough test unscarred—unmarred.

**Proved in chamber of horrors**

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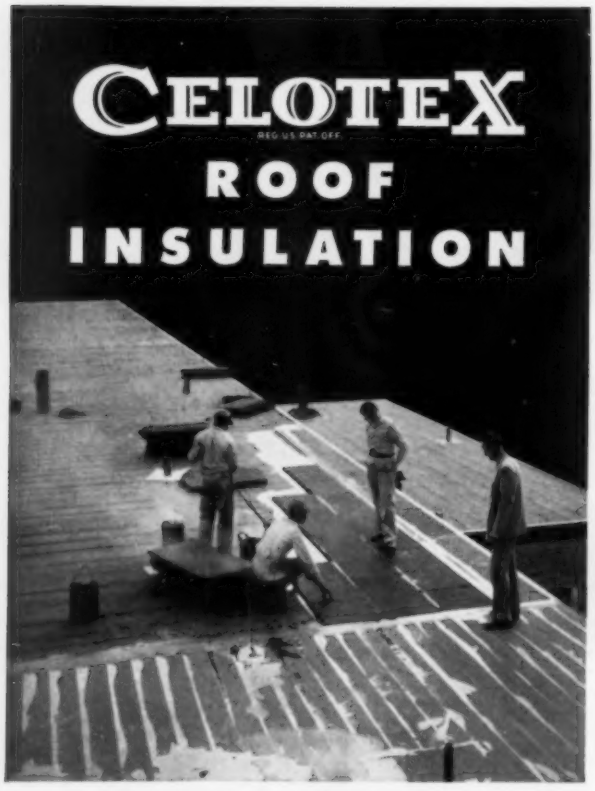
# Proved by the test of time...
# Preferred for today's roofing needs!



**31 YEARS ON THE JOB!**
**Woodward and Tiernan Printing Co., St. Louis, Missouri.** 225,000 square feet of Celotex Roof Insulation applied in 1925 . . . and still doing a job!

**SPECIFIED FOR EVINRUDE!**
**Evinrude Motors Building, Milwaukee, Wisconsin.** 300,416 square feet of Celotex 1" Preseal Roof Insulation used. Roofing Contractor: F. J. A. Christiansen Roofing Co., Inc., 2139 West Purdue Street, Milwaukee, Wisconsin.

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**Made from tough cane fibers.** The only roof insulation made from genuine Louisiana cane fibers . . . long, tough, durable.

**Controlled density and thickness.** Quality control insures exact, even density . . . providing uniform insulation over the roof deck.

**Excellent bond—no excess take-up of bitumen.** Compactness of surface means insulation value is not materially affected by moppings on the job.

**Firm, squared edges—snug joints.** Provide flush contact at board joints for top insulation efficiency, protection from punctures.

**Resists damage from rough handling.** Tough cane fiber board clear through . . . no weak spots to tear or break in shipping and application.

**Strong, rigid, crush-resistant.** Withstands wheeling and job traffic; resistant to punctures or depressions forming weak spots.

**Moisture-resistant.** Special chemical treatment renders board moisture-resistant throughout. Preseal and Channel-Seal are asphalt coated.

**Termite and dry rot resistant.** Protected against dry rot and termite attack by exclusive Ferox® Process.

**OVER A THIRD OF A CENTURY OF LEADERSHIP IN EFFICIENCY, DURABILITY, ECONOMY!**

In the past 35 years, The Celotex Corporation has manufactured and sold many millions of square feet of roof insulation. The advantages of specifying Celotex Roof Insulation become more and more obvious as the years go by . . . for this dependable insulation has proved able to stand up to time, wear, and weather, decade after decade. *Be sure* always to specify *job-proved* Celotex Roof Insulation.

*It pays to specify genuine*

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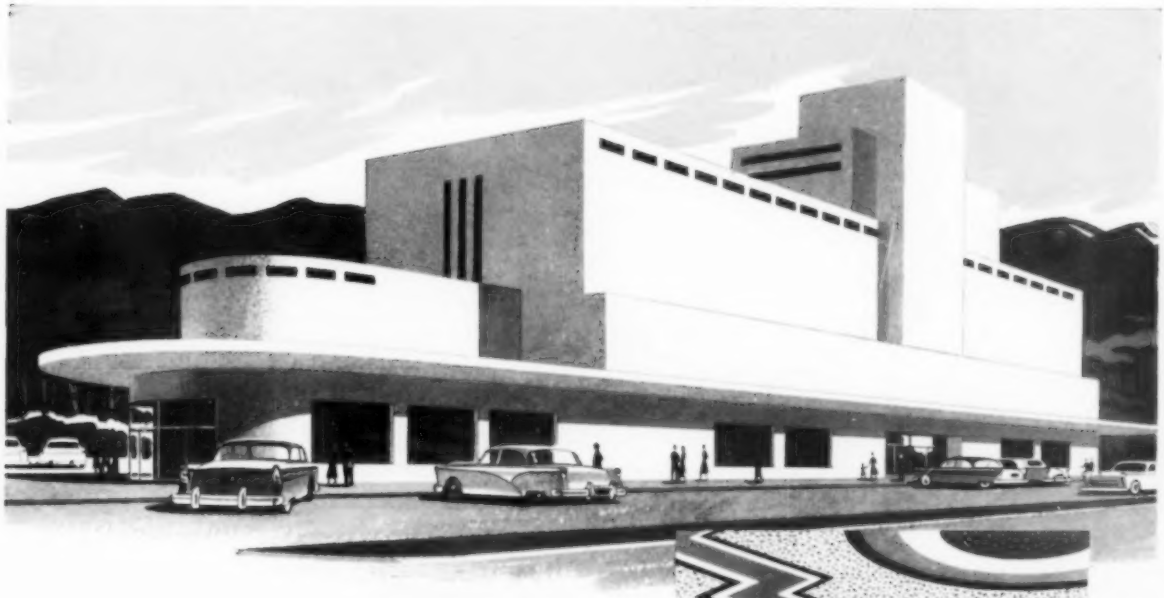
ROOF INSULATION

THE CELOTEX CORPORATION, 120 SOUTH LA SALLE STREET, CHICAGO 3, ILLINOIS

# A 3-Point MEDUSA WHITE Cement Specification Policy for Architects



## ① ARCHITECTURAL CONCRETE

Architects employing architectural concrete, terrazzo and stucco in their designs can make buildings much more striking and attractive *if* they specify the *type* and *kind* of portland cement. That's because this type of concrete construction is always visible to the naked eye in large mass areas . . . and a white portland cement and light colored aggregates presents a more pleasing effect. Furthermore, the discriminating architect specifies "Medusa White" as his white cement since only this cement has the beautiful diamond blue white color. Because it is the original white cement, originated in 1907 and time tested for a half century, the architect can place absolute dependence in the uniformities of its blue white color, its non-staining properties and its complete resistance to weather changes and shrinkage. When you specify a white cement, be sure it's Medusa White. Write for your complimentary copy of Medusa's A.I.A. File No. 3-A-2 on White cement.

## ② TERRAZZO

## ③ STUCCO

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**MEDUSA PORTLAND CEMENT COMPANY • 1000 Midland Building • Cleveland 15, Ohio**

WHITE • WATERPROOFED WHITE • GRAY • STONESET
WATERPROOFED GRAY • AIR ENTRAINING • BRIKSET
HIGH EARLY STRENGTH • WHITE TILE GROUT CEMENT

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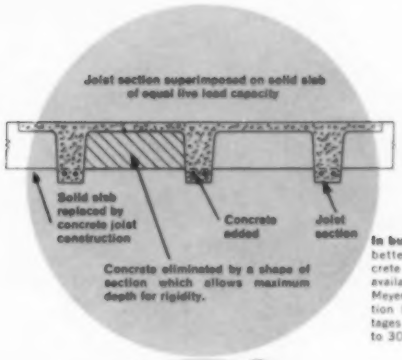
OVER SIXTY YEARS OF CONCRETE PROGRESS

6 words that spell comfort in a hospital...

**Less Noise**
**Proper Daylighting**
**Good Ventilation**

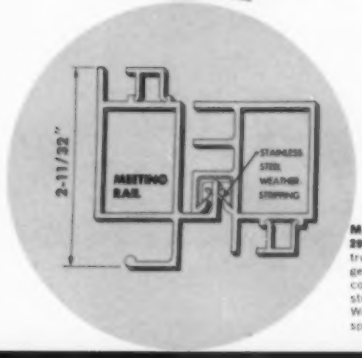
## ...and Ceco building products make all this come true

Patient comfort always is a consideration in the building of a hospital. But when architect Leo A. Daly designed the Bishop Clarkson Memorial Hospital, Omaha, Nebraska, *special emphasis* was given that factor. Hal G. Perrin, administrator, and Robert H. Storz, chairman of the building committee, consulted with architect Daly . . . patients were queried . . . all agreed that noise, daylighting and ventilation should come in for critical study. The soundproof characteristics of Ceco-Meyer Concrete Joist Construction and the daylighting and ventilating advantages of Ceco Windows met the requirements. Architect Daly made this further comment on the building method: "This construction is light in weight, but affords exceptional stiffness because of additional depth provided by the monolithic floor and joist section."


Joist section superimposed on solid slab of equal live load capacity
Solid slab replaced by concrete joist construction
Concrete added
Joist section
Concrete eliminated by a shape of section which allows maximum depth for rigidity.

**In buildings,** there's nothing better than reinforced concrete . . . rugged, firesafe and available now. In floors, Ceco-Meyer Concrete Joist Construction brings you those advantages . . . with savings of 10% to 30% in concrete and steel.

**Ceco-Sterling Series 200-B Window** — Ceco-Sterling Double-Hung Windows assure minimum air infiltration. Sash float on stainless steel weatherstripping, providing tight but easy-operating, silent windows.




**Meeting Rail Section, Series 200-B Window** — Heavy extruded box sections assure rugged performance . . . double-contact stainless steel weatherstripping provides tightness. Weatherstrip at jambs gives a spring cushion sliding contact.

Bishop Clarkson Memorial Hospital, selected as the "Hospital of the Year." Leo A. Daly Co., Architects and Engineers: Peter Kiewit Sons' Co., Contractors

Ceco Steel Double-Hung Aluminum Windows got the call for better daylighting because glass areas are bigger . . . mullions sleeve together. The windows are tight, a factor in efficient air-conditioning . . . they operate silently and are easy to maintain. Ceco helped the contractor maintain a fast pace of construction by coordinated deliveries of reinforcing steel, steelforms and windows. For your next project, consult Ceco Engineers. You can be sure of counsel and service to aid you in adapting the right building product to your particular problem.

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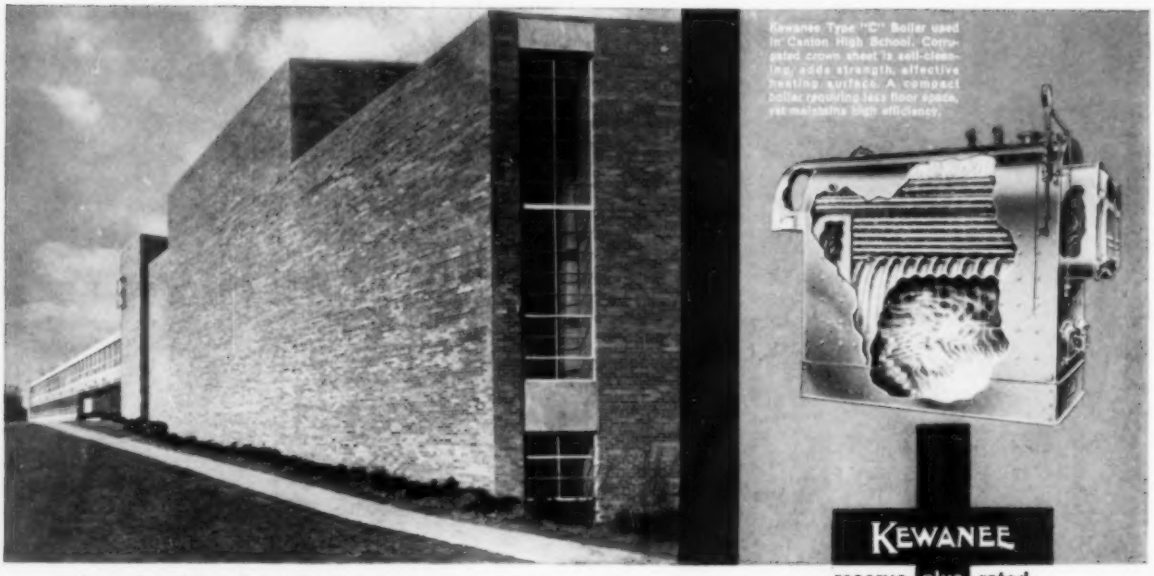
**In construction products Ceco Engineering makes the big difference**

Concrete visors for shading and window washing are dramatized in this view. Shaded windows are Ceco-Sterling Double-Hung Aluminum Windows and Picture Windows.

# No service calls in 2 years with *"Cruising Speed"* operation


Kewanee Type "C" Boiler used in Canton High School. Corrugated crown sheet is self-cleaning, adds strength, effective heating surface. A compact boiler requiring less floor space, yet maintains high efficiency.
KEWANEE
reserve plus rated

Canton High School, Canton, Illinois
Architect—Atkins, Barrow & Lasswith (now Atkins, Barrow & Associates) Urbana, Illinois
Engineer—Consulting Engineering Service, Urbana, Illinois
Heating Contractor—Hays Plumbing & Heating Company, Urbana, Ill.

**■ Canton High School votes experience the best teacher in selecting boilers...**

There's an old saying that goes like this... "Experience is the best teacher." The Canton High School, Canton, Illinois, prides itself on its fine academic teaching staff. But for knowledge of boiler operation, old "Dr. Experience" gets the call. So, when it came to selecting a boiler, school executives, the architect, engineer and contractor took a page from the past and chose Kewanee Reserve Plus Rated Boilers. Yes, experience proved Kewanee "cruising speed" boiler operation gave trouble-free performance with lower fuel and maintenance costs—higher efficiency, too. In 2 years there has not been one single service call. But that's easy to understand because "cruising speed" boiler operation guards against breakdown—there's less strain, less wear, higher efficiency, lower maintenance and fuel costs. And Kewanee reserve takes care of fluctuating demands and high power peaks, because Kewanee Boilers are rated on nominal capacity which guarantees 50% extra built-in power. Boilers rated on maximum capacity have no reserve to meet emergencies—must operate constantly at top speed—require more maintenance. So take a tip from those who have learned from experience and choose Kewanee Boilers. You'll be money ahead if you do. KEWANEE BOILER DIVISION OF AMERICAN-STANDARD, 101 Franklin St., Kewanee, Illinois.

**KEWANEE BOILERS**

***You can depend on Kewanee engineering***

# SHOWER-UP

# a safe shower

Injury may occur when student jumps from shower because of sudden temperature change.

Hydroguard lets each bather select the temperature he likes best.

If cold water supply fails, Hydroguard shuts off the hot water instantly, automatically.

**POW**

**HYDRO**

# or possible injury?

## Powers HYDROGUARD® Thermostatic Control protects against sudden temperature variation

When shower temperatures fluctuate, as they often do for a number of reasons, students in the shower scramble to avoid the sudden spray of hot or cold water – they may slip, fall or be scalded. This danger can be avoided with Hydroguard,® the *thermostatic* shower valve that provides positive safety plus individual temperature control.

With the turn of *one* dial, each student can have the temperature he enjoys most – warm, cool or anywhere in between. Once set, Hydroguard maintains that temperature regardless of changes in supply pressure or supply temperature. As an added precaution, Hydroguard® has a built in safety limit so that it cannot deliver water hot enough to scald . . . even if the dial is turned all the way to "Hot." It shuts off the hot water instantly, automatically, if the cold water supply fails.

*Only a thermostatic control offers you this complete protection.*

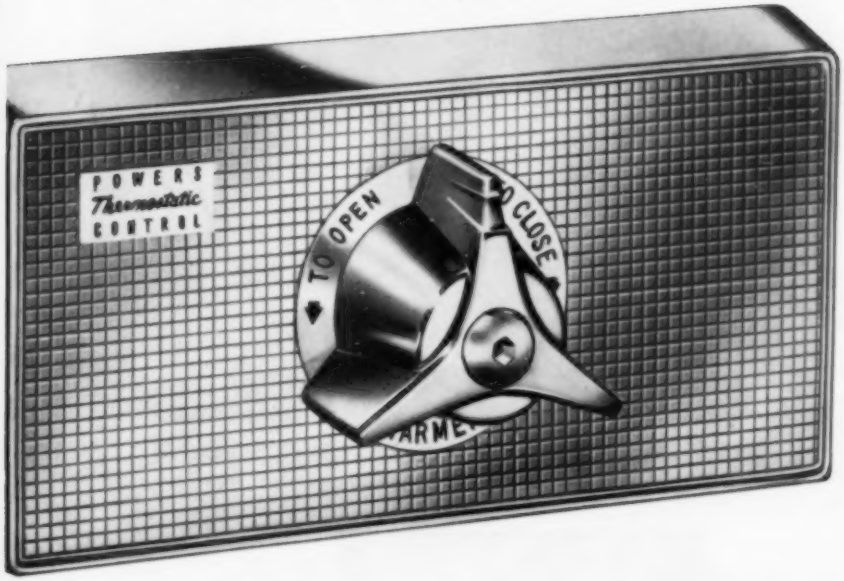
Hydroguard® conserves hot water formerly wasted while adjusting and balancing the hot and cold water valves to the desired temperatures; it simplifies piping and tile work and improves appearance.

Specify Hydroguard® *thermostatic* valves for your new school shower room, dormitory, gymnasium, or swimming pool – then you'll *know* that safety and comfort have been provided.

**THE POWERS REGULATOR COMPANY**
Skokie 4, Illinois
Specialists in thermostatic control since 1891

Charles W. Nichol & Associates, Chicago – Architect
John K. Fairbairn, Chicago – Mechanical Engineer

Palatine (Ill.), Township High School has Hydroguards® in more than 60 showers.



Additional information is available in our new booklet, "Safer Showers." Write for your copy today.

# POWERS GUARD®

# WEIS INSTALLED IN WORLD'S BIGGEST!

ARCHITECT: *Maurer & Maurer, Architects & Engineers*
CONTRACTOR: *Black & Anderson Construction Co., Inc.*

THE NORTH SIDE Gymnasium at Elkhart, Indiana, is the world's largest high school gymnasium . . . with a seating capacity of nearly 9,000. And in keeping with this modern building's excellent furnishings, *Weisart* ceiling-hung toilet compartments were installed. These toilet compartments are proving themselves in appearance and easy maintenance to be a most economical installation . . . as they have in thousands of buildings throughout the nation. Send coupon below for further information about the complete line of Weis toilet compartments.

**WEISART** ceiling-hung style combines modern appearance with sanitation. No dirt-catching corners, no posts to interfere with floor maintenance. Completely rigid. Made to withstand use and abuse. Choice of 24 oven-baked enamel colors. Brass hardware is chrome plated.

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866 Weisway Building, Elkhart, Indiana

Please send free descriptive catalog of Weis
☐ toilet compartments ☐ cabinet showers

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FIRM_____

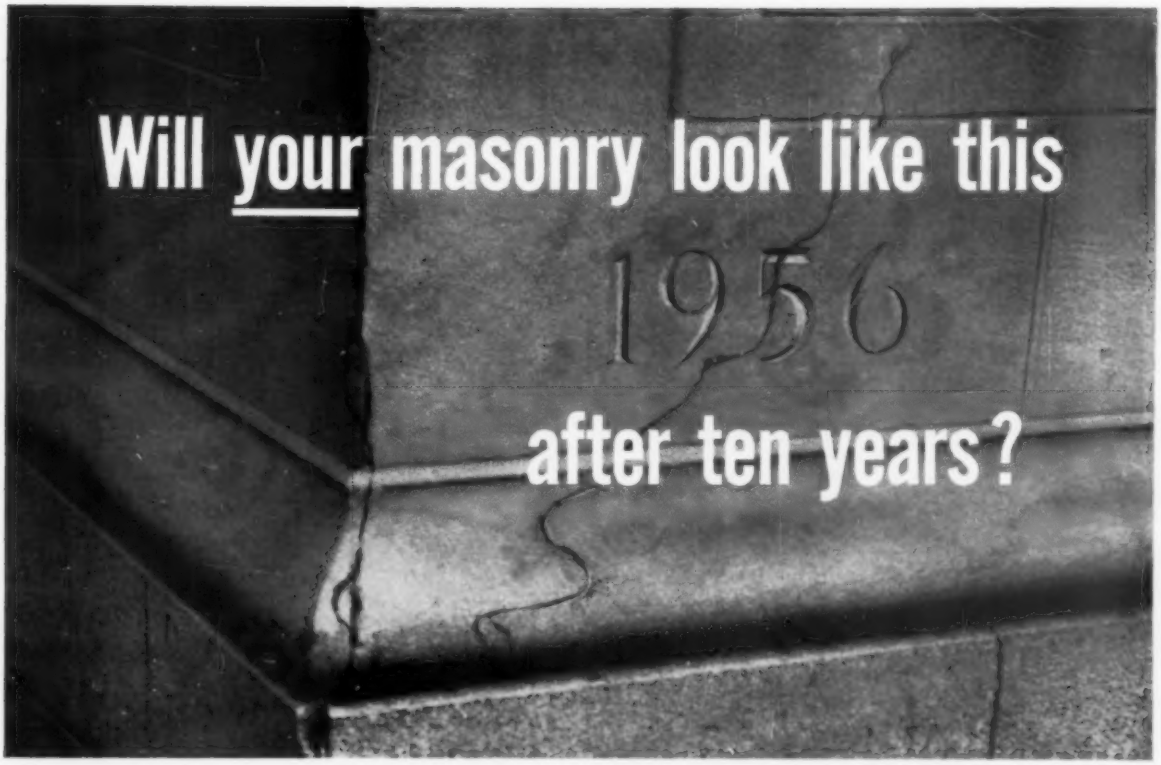
ADDRESS_____

CITY, STATE_____

☐ Please send name of representative.

**WEIS**

*toilet compartments and cabinet showers for schools, institutions, industry and home*




# PROTECT IT FROM MOISTURE NOW...

## *with durable* G-E SILICONE *"defense in depth"*

**Water cracked this concrete**—by getting into the masonry pores, freezing and expanding. Keeping water out of masonry makes it last longer. A simple, inexpensive treatment of above-grade masonry, with water repellents containing General Electric DRI-FILM® silicones, retards cracking and spalling . . . preserves masonry beauty by checking unsightly efflorescent stains. Your masonry stays cleaner, too, for water can't carry dirt or stains into the pores. And, of course, a water-repelling *exterior* means a dry *interior*.

**PROVIDES *"defense in depth"***

A water-repellent treatment with DRI-FILM silicones is the *most durable known*—because it provides "defense in depth." Silicones actually *penetrate masonry pores*—get deep inside—where they cannot be eroded away. *Durable* silicone protection *lasts for years!*

**Why not ask your supplier** of water repellents about *silicone* protection for *your* masonry? For the names of suppliers using G-E DRI-FILM in their products, write to:

**Silicone Products Department**
**General Electric Company**
**Section 164-1A, Waterford, New York**
(IN CANADA, write to Canadian General Electric Co., Ltd., Toronto.)

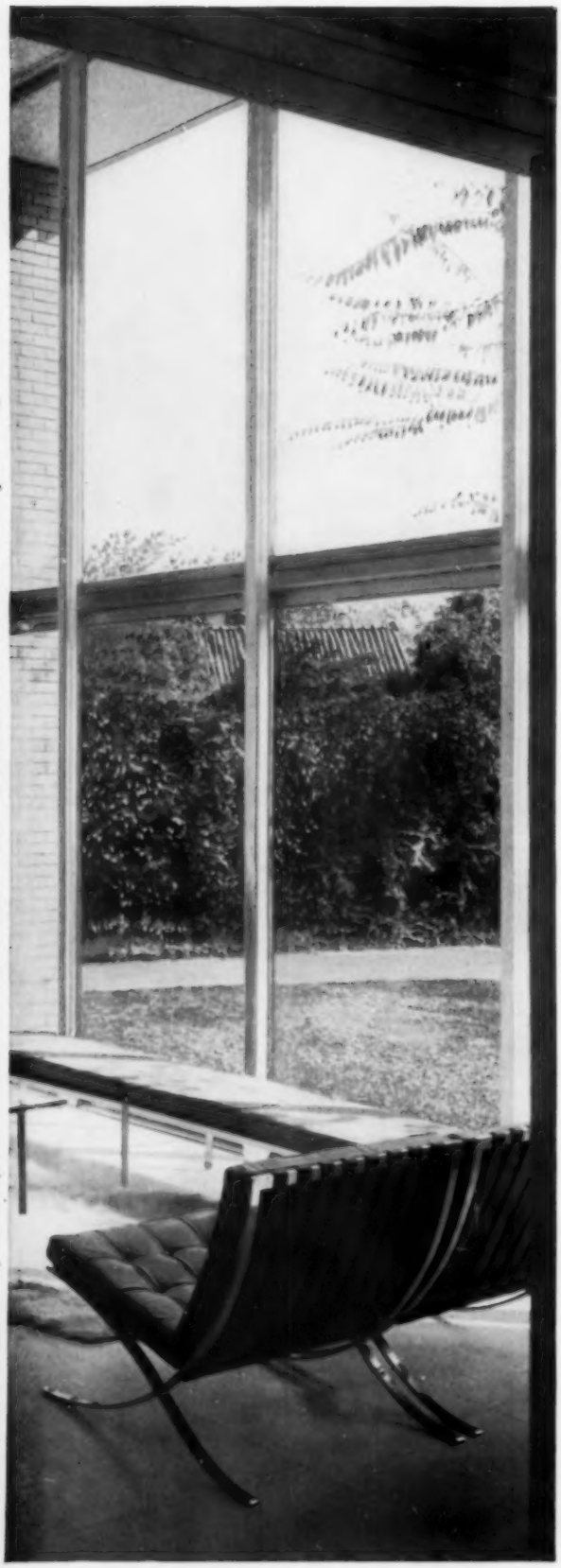
**Paint and Chemical Manufacturers!**

DRI-FILM silicones offer you a profitable opportunity to add a superior water repellent to your product line. Ask us about them!

*Progress Is Our Most Important Product*

GENERAL ELECTRIC

# Carrier again makes news



# Modern Texas home is designed around Carrier Air Conditioning

## *Year-round Weathermaker makes distinctive design features possible*

This is the spacious and bright living room of Mr. and Mrs. G. S. Gordon of Houston, Texas. It illustrates dramatically the new creative freedom which the Carrier Weathermaker Home concept has brought to architectural design.

In conceiving this handsome home, architects Bolton and Barnstone created their design around air conditioning instead of designing the house first and then adding air conditioning.

This made possible fresh, new structural features and innovations in the use of materials.

For example, in the Gordon home the striking two-story fixed glass walls could not have been used without year-round air conditioning. And ventilation needs would also have prohibited the Gordon's three windowless interior baths as well as the placement of glass and brick walls.

Everywhere the Carrier Weathermaker Home concept is helping builders to put up homes of imaginative design, individuality and salability. It can help you, too.

For the full story on Weathermaker Homes, look up the Carrier dealer listed in the Classified Telephone Directory or write Carrier Corporation, Syracuse, New York.

**Carrier**

**First Name in Air Conditioning**

← Houston, Texas, residence of Mr. and Mrs. G. S. Gordon. Architects were Bolton and Barnstone, A.I.A.

In addition to Bethlehem Longspans the San Leandro, Calif., distribution center of Western Electric Company contains 583 tons of Bethlehem structural shapes. *Architects and Engineers:* Lockwood and Greene Engineering, Inc., New York City. *General contractor:* Swinerton and Walberg Company, San Francisco and Oakland.

# NEW WESTERN ELECTRIC BUILDING HAS NEARLY 7 MILES OF LONGSPANS

A new Western Electric Company distributing house at San Leandro, Calif., contains 482 tons of Bethlehem Longspan Joists — or 35,317 lineal ft — in the roof structure.

The new structure measures 425 by 525 ft and covers some five acres of ground. It is a distribution center for telephone supplies to Pacific Telephone and Telegraph Company's Northern California area.

Bethlehem Longspans were selected for the roof structure of this building for a number of reasons. Longspans allowed the planners to make maximum use of floor space, because supporting columns could be reduced to the fewest possible. Pipes and conduits could be run right through the open webs of these joists, greatly simplifying the installation of electrical and heating systems. Bethlehem Longspans saved construction time, too. They arrived at the job site fully fabricated, clearly marked and ready for immediate placing.

Bethlehem Longspans are good joists to remember when you are planning a building where maximum unobstructed floor space is a paramount consideration. The nearest Bethlehem sales office will be glad to furnish full information about Bethlehem Open-Web Steel Joist, both Longspan and Shortspan series. Or write to us at Bethlehem, Pa.

**BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.**

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

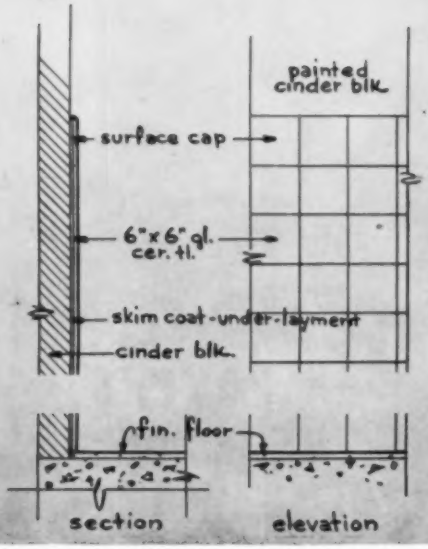
**BETHLEHEM LONGSPAN JOISTS**

BETHLEHEM STEEL

# ROMANY *Real Clay* TILES

**SPECIFICATION**

**This project is one where the masonry walls were specified to be as true and plumb as possible, but in case it was found necessary, a skim coat of cement or underlayment was to be applied by or under the direction of the Tile Contractor to receive tile. It was thought best to apply this skim coat, and underlayment was used to the height of the wainscot or wall to be tiled. Tile was applied after floor finish was in place, with no cove — except where floor was tiled.**



## *for* SCHOOL

**CLASSROOMS CORRIDORS**
**REST ROOMS CAFETERIAS**
**GYMNASIUMS AUDITORIUMS**
**STAIRWAYS AND OTHER AREAS**

Illustrated is a corridor and reception room in the Tholl Street School, Norfolk,, Virginia, for which Oliver & Smith, A.I.A., were the Architects. The Tile Contractor was Ajax Tile & Marble Co. of Norfolk. The wall tile in the corridor is ROMANY Nos. 741 Citrus Yellow and 787 Brown and in the reception room, ROMANY No. 741 Citrus Yellow. ROMANY Real Clay Tile possesses characteristics of exceptional value in school installation and maintenance, resulting from our long experience in supplying tile best adapted to school needs.

Aside from attractive appearance and that all ROMANY Tile is stain proof, acid proof, fade proof and fire proof, there is the essential fact that ROMANY Tile will withstand abuses from scuffing and other wear incidental to school life. This is achieved by ROMANY Buff Body Tile with its rugged clay body and hard glazed surface.

Where exceptional wear and abuse is anticipated, this condition is fully met by ROMANY Red Body Tile, which is far tougher than competitive products.

***Write for our "School Folder"***

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And Its Subsidiary, THE SPARTA CERAMIC CO.

*Member: Tile Council of America and Producers' Council, Inc.*

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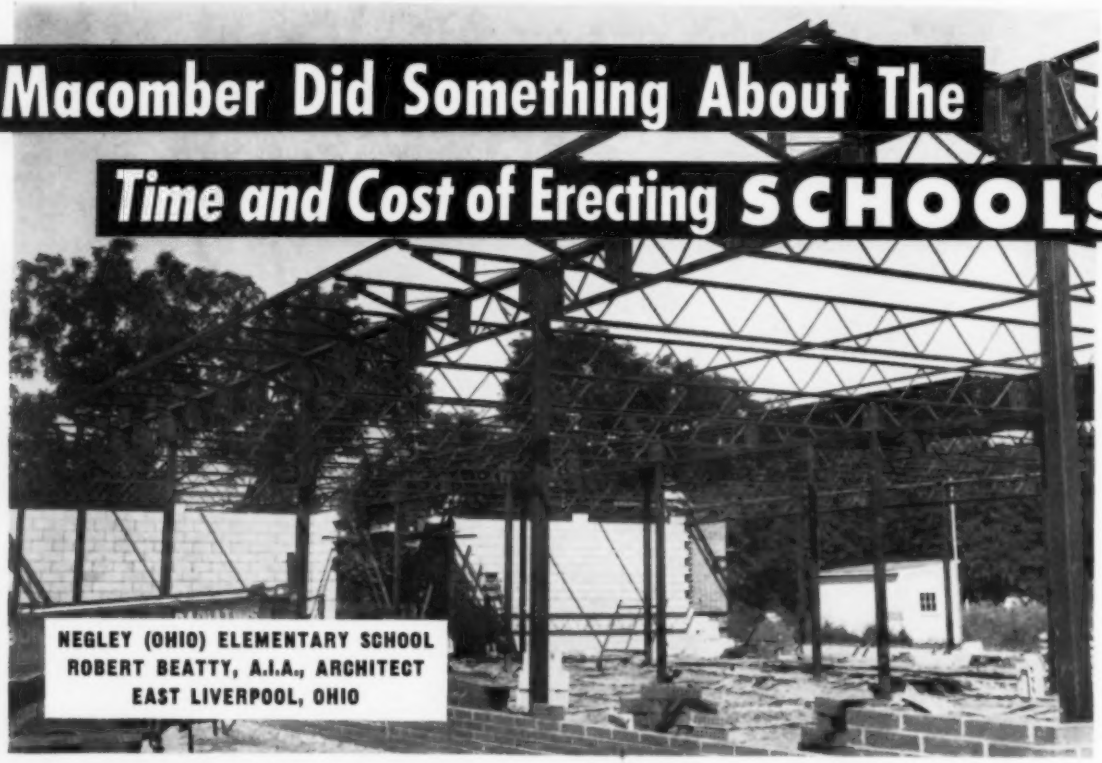
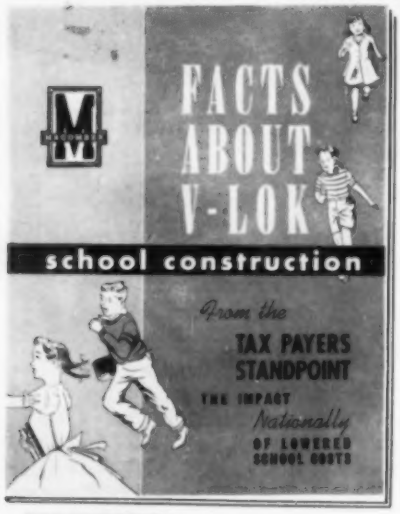
# Macomber Did Something About The *Time and Cost of Erecting* SCHOOLS



NEGLEY (OHIO) ELEMENTARY SCHOOL
ROBERT BEATTY, A.I.A., ARCHITECT
EAST LIVERPOOL, OHIO

## WHEREVER A V-LOK STEEL FRAME IS USED, A SCHOOL BOARD AND LOCAL TAX PAYERS SAVE MONEY AND THE SCHOOL IS IN USE MONTHS EARLIER




Schools all across the country are being erected at tremendous savings — per square foot — due to the speed of interlocking structural members. Large rambling elementary and secondary schools are erected and under roof in a few days when Architects design with V-LOK. This is just the reverse of the ancient practice of eventually putting a roof over a school when the walls are completed.

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Another sound idea from Gold Bond

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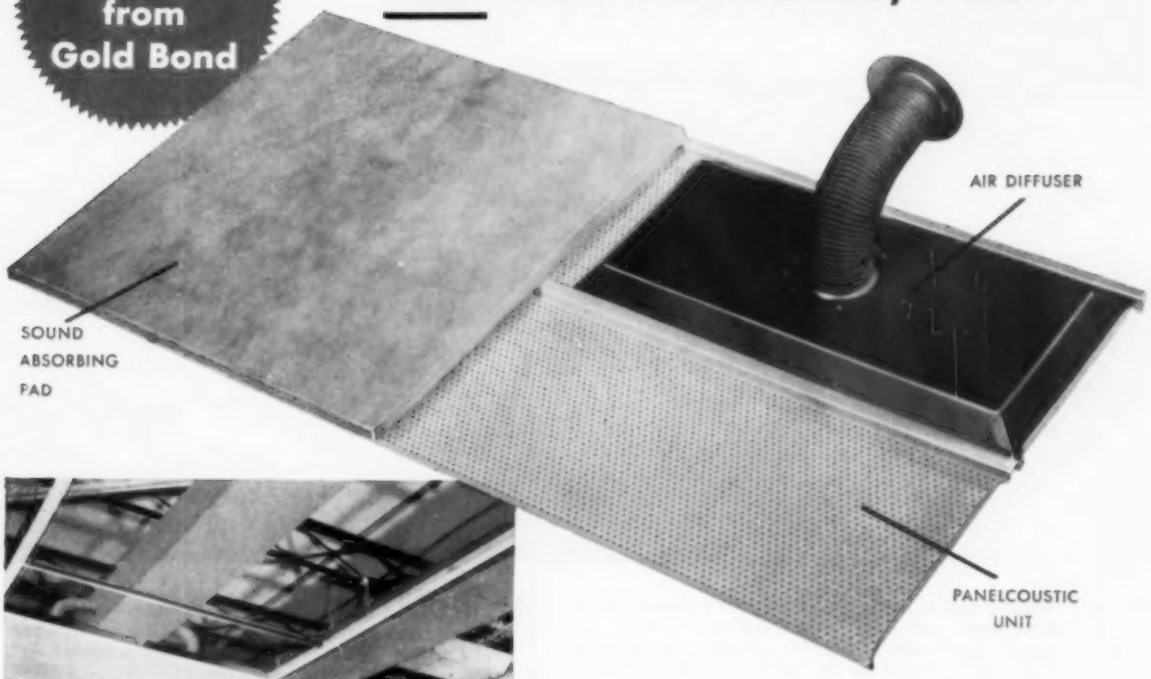

Large Panelcoustic panels go up quickly, hide all utilities, are removed for access.

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- ***Give you clean ceiling surfaces***
- ***Hide air conditioning outlets***

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**NATIONAL GYPSUM COMPANY**

**Gold Bond®**
**BUILDING PRODUCTS**

*Fenestra*
SCHOOL DESIGN
NEWS

**Fenestra Acoustical Building Panels** form the structural roof and finished ceiling for St. John Bosco Church and School, Hammond, Indiana. If a larger sanctuary is built, this room can be converted for a gymnasium or auditorium at minimum cost. *Architect:* Bachman & Bertram, Hammond, Indiana. *Contractor:* Swenson-Carlson Builders, Inc., East Chicago, Indiana.

**This multipurpose room** at South and Northwest Schools, Adrian, Michigan, also has a Fenestra Acoustical Building Panel roof. The metal pan ceiling is impervious to damage and may be washed or repainted as often as needed without reducing acoustical effectiveness. *Architect:* Louis C. Kingscott & Associates, Kalamazoo, Michigan. *Contractor:* W. N. Bjorklund, Douglas, Michigan.

Fenestra

Building Panels

with "built-in" acoustical

treatment

cut the cost of . . .

# MAINTENANCE-FREE CEILINGS FOR MULTIPURPOSE ROOMS

**Here you see how** the Fenestra Building Panels are installed over beams to form the structural roof deck and finished ceiling. Acoustical material is "built-in" the panels and the underside is perforated to absorb sound. Ask your Fenestra Representative to show you a sample.

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Fenestra Building Panels combine the structural roof deck, finished interior ceiling and acoustical treatment in one easily erected building unit. One trade installs them in one operation!

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Since 1930, Fenestra has pioneered in the design and production of metal building panel products with "built-in" acoustical treatment. This experience plus the modern Fenestra production facilities assures delivery of quality building products to meet your job schedule.

When you are planning your next school, ask your Fenestra Representative, listed in the Yellow Pages—to show you an actual sample of this moneysaving building material. Call him, today, or mail the coupon below for information.

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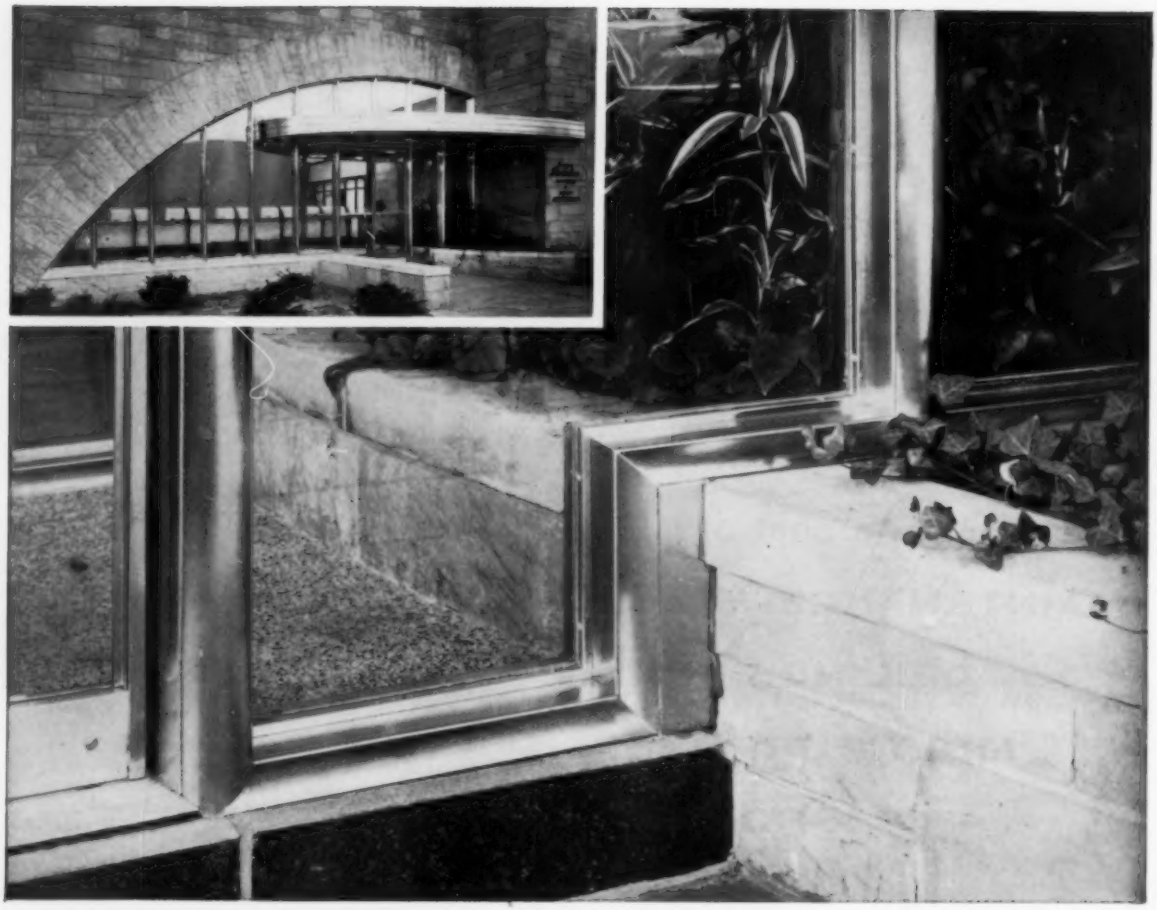

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Here's an intriguing entrance design for a recently-built midwestern structure. Stone and stainless steel and glass . . . a planter that continues inside . . . two sweeping curves in opposed planes.

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Keep it in mind, too, that A-L Stainless Steel is versatile—you can employ it in your structures in everything from building hardware to an entire curtain wall design. ● If we can help you with any data or engineering assistance, call on us. ***Allegheny Ludlum Steel Corporation, Oliver Building, Pittsburgh 22, Pa.***

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2 "Stainless Steels for Store Fronts and Building Entrances"—40 pages of valuable data on examples and details. AIA File No. 26D.

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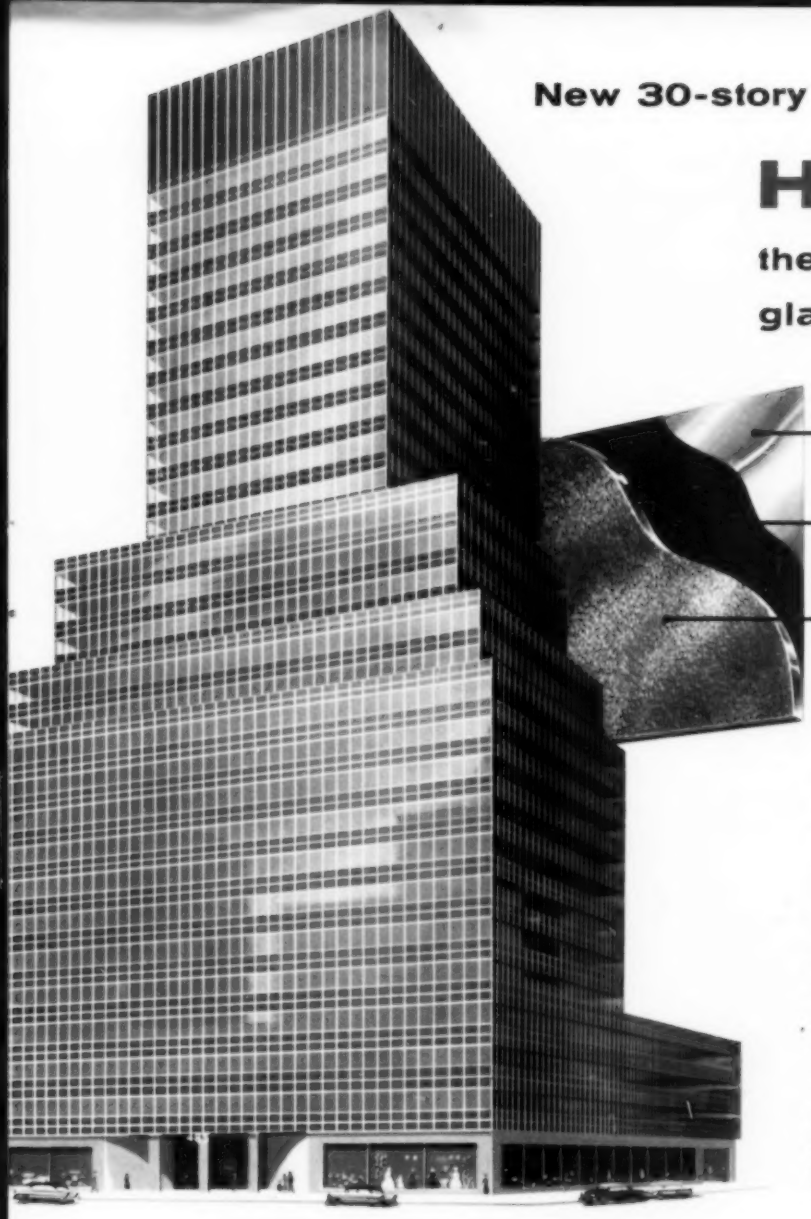

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*Owners and Builders:* Uris Bros., New York, N. Y.
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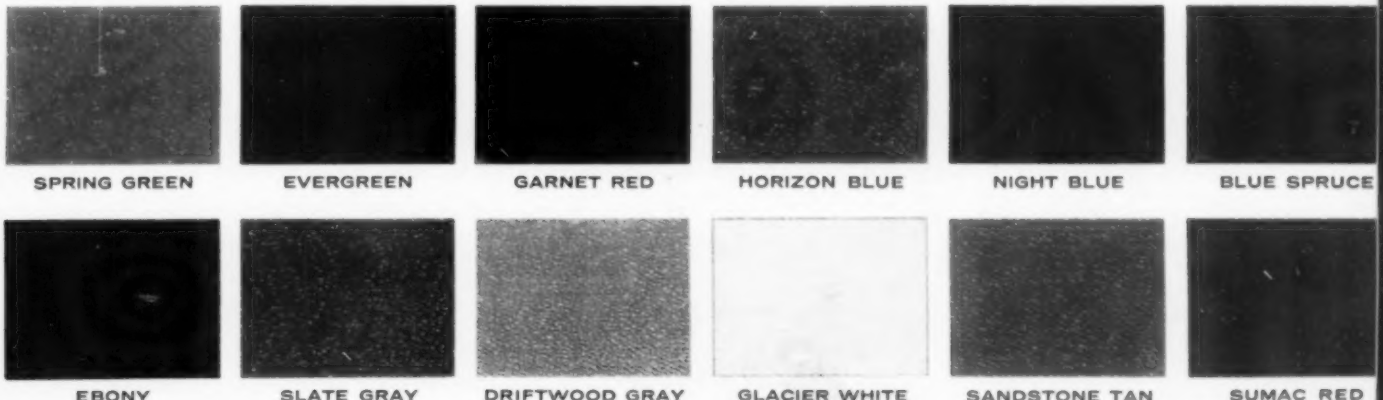

**RIVERSIDE HOSPITAL**

*Architect:* James B. Bell, New York City
*Engineers:* Slocum & Fuller, New York City
*Hospital Consultant:* Otis Auer, Glen Ridge, N. J.
*General Contractor:* Frank Briscoe Company, Newark, N. J.

# LIGHTSTEEL system helps save $250,000 for Riverside Hospital

A problem in hospital design is high cost . . . of patient comfort factors and fireproof construction. That problem becomes more acute under the confines of a limited budget—as was the case with Riverside Hospital, Boonton, N. J.

When the hospital was planned, comparative cost analyses were made of 32 different designs. Conclusion: Penmetal LIGHTSTEEL framing was just what the doctor ordered—important savings could be effected by using this system. It afforded all the advantages of conventional steel framing, but without the waste and high costs of overdesign.

The building has a total of 450,064 cu. ft. Cost including kitchen equipment, emergency generator, X-ray equipment, plus an allowance for contingencies came to $675,000. Thus the cost per cu. ft. is $1.50. That's 50 cents per cu. ft. under the national average for this type of hospital!

The architect accomplished savings through judicious use of the 3⅝" punched channel stud spaced 2 feet on center, because it was estimated that there would be no penalty for tying ⅜" Penmetal Masterib to this stud.

Economical to buy, LIGHTSTEEL also cut actual erection costs. Because they are light in weight, complete wall units could be shop-assembled . . . then trucked to the job site for immediate placement. Other savings were obtained by precisely engineered openings in the sections which simplified through-frame installation of wiring and plumbing.

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## REYNOLDS ALUMINUM IN MODERN ARCHITECTURE

REYNOLDS

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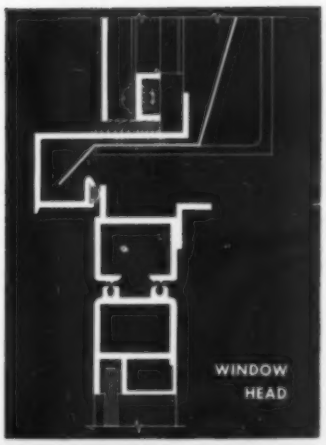
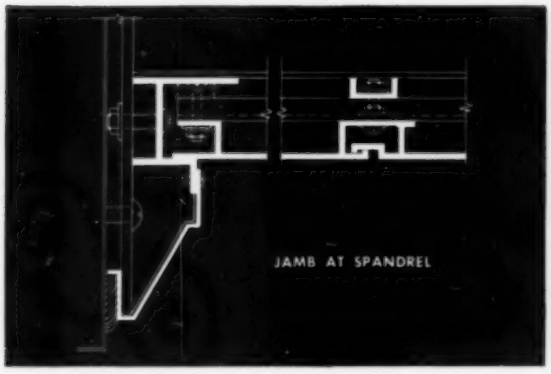
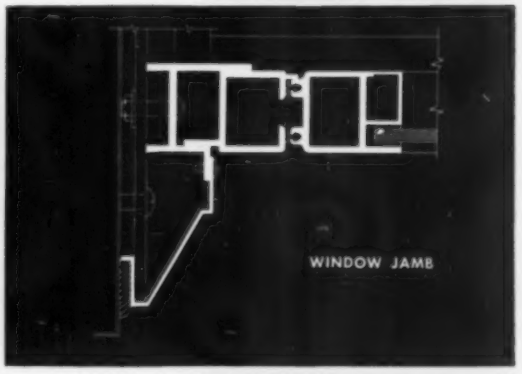
***General Contractor:***
A. H. Neumann & Bros., Inc.,
Des Moines

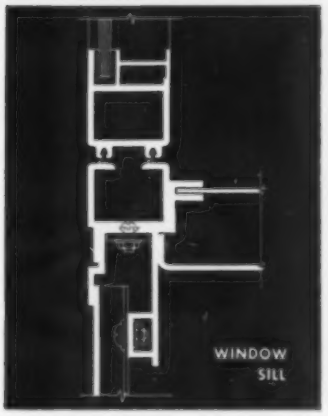
***Erector:***
David Architectural Iron Works,
Chicago

***Architects:***
Tinsley, Higgins, Lighter & Lyon,
Des Moines




**Reynolds Aluminum Applications in this Building**

Aluminum Wall Window Units consisting of Reynolds Series 100 Vertically Pivoted Windows, Interlocking Extruded Spandrels and Aluminum Metal Wall Accessories.

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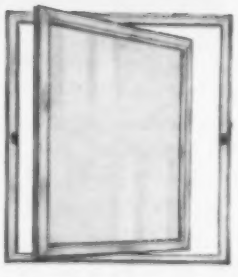

**REYNOLDS SERIES 100 VERTICALLY PIVOTED WINDOW** as used for Northwestern Bell Telephone. Provides minimum air infiltration, positive locking. Revolves easily for washing from the inside. All welded frame construction. Self-draining.

See "FRONTIER," Reynolds great dramatic series, Sundays, NBC-TV Network.

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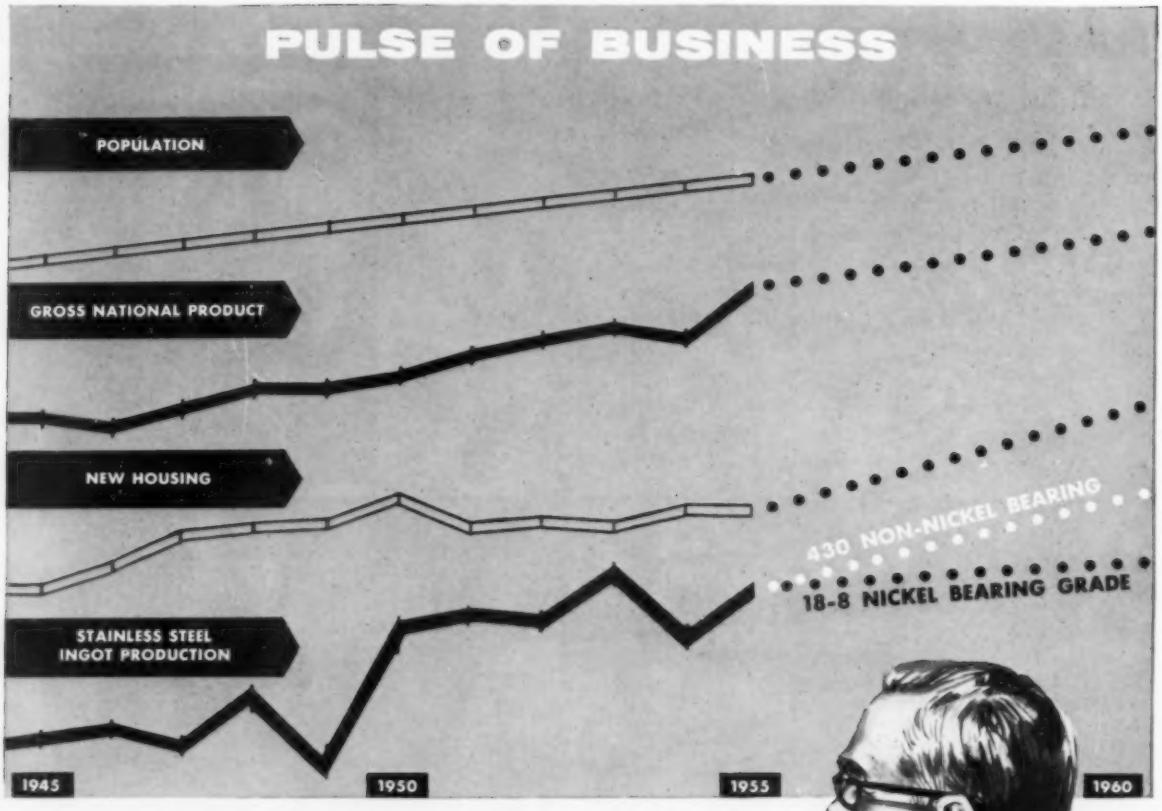


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***Open beam ceiling,*** designed by Architect Reginald Roberts, San Antonio, Texas, was achieved by use of Insulite Roof Deck throughout home.

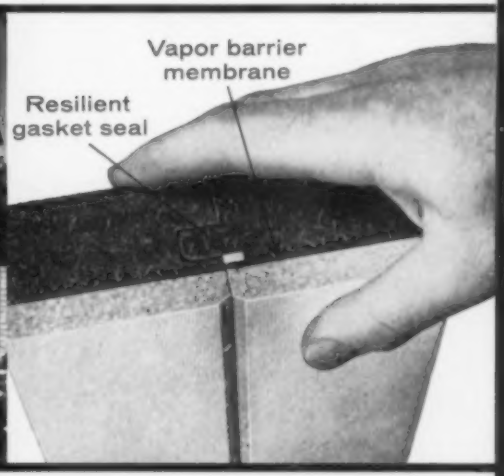
# Texas Architect's home designed with Insulite Roof Deck

***This is the home of Reginald Roberts, A.I.A.,*** in San Antonio, Texas. Here you see the work of an architect free to do everything in the way that pleased him most. The home is notable for open-beam design throughout, accomplished economically by use of Insulite Roof Deck.

Roof-and-ceiling construction used 5,500 square feet of 3-inch Insulite Roof Deck. Under this handsome, low-pitched roof are a living room, dining room, kitchen, utility room, 3 bedrooms, 2 baths, den, workshop, maid's room and bath. The roof also covers a 3-car carport.

Luxurious homes are part of the diversified work of Reginald Roberts Associates. In recent years, a large number of homes designed by the firm have used Insulite Roof Deck—a 3-in-1 material that serves as decking, insulation and pre-finished ceiling. Made in 2′x8′ tongue and groove sections, it ordinarily saves about 12 man hours per 1,000 feet of surface as against 2″x6″ D&M sheathing.

Want technical data and literature? Write Insulite, Minneapolis 2, Minnesota.




***Beautifully adapted*** to the San Antonio landscape, the home has generous expanses of exterior glass, with angles and overhangs that provide sunlight and shade as desired. Insulite Roof Deck helps keep all rooms delightfully cool.

***For any type of job; any climate*** . . . Insulite Roof Deck is made 1½″, 2″ and 3″ thick, without vapor barrier; 2″ and 3″ thick with vapor barrier. No roof boards, insulation, lath or plaster needed. No painting, staining or other finish required on ceiling side.

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***INSULITE,*** *Made of hardy Northern wood*

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**the builder** likes working with Stainless Steel. It is easy to install, does not dent, peel or discolor and presents no problem on matching or replacement.

**the tenants** enjoy living or working in buildings that are bright, clean and attractive because of Stainless Steel.

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McLOUTH STEEL CORPORATION DETROIT, MICHIGAN • MANUFACTURERS OF STAINLESS AND CARBON STEELS

THE DURABLE GARDEN REDWOOD EXTERIOR BRINGS BEAUTY TO THE INTERIOR OF THIS HOME. IN THE SPAN OF A PANE OF GLASS. YOU'RE LOOKING AT THE REASON SO MANY CONTEMPORARY HOMES. DESIGNED FOR INDOOR-OUTDOOR LIVING. ARE BUILT WITH CALIFORNIA REDWOOD.

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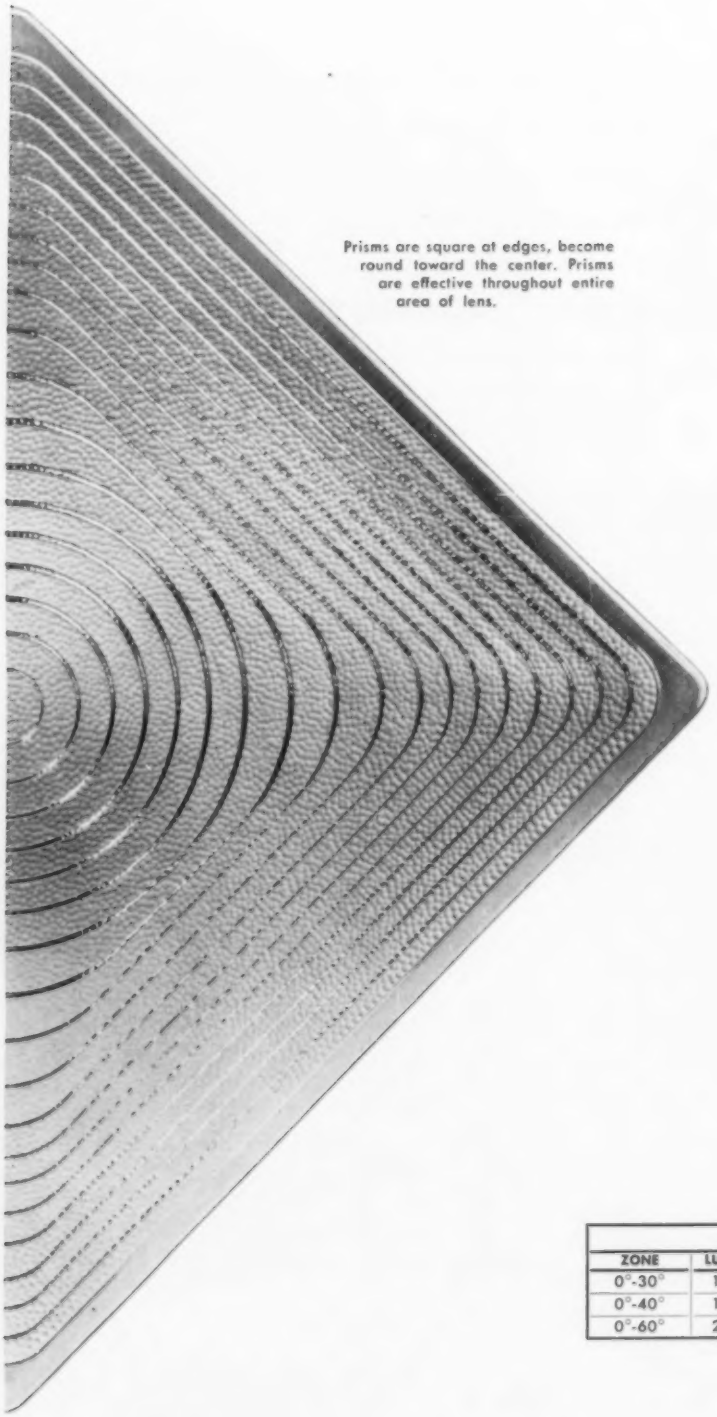
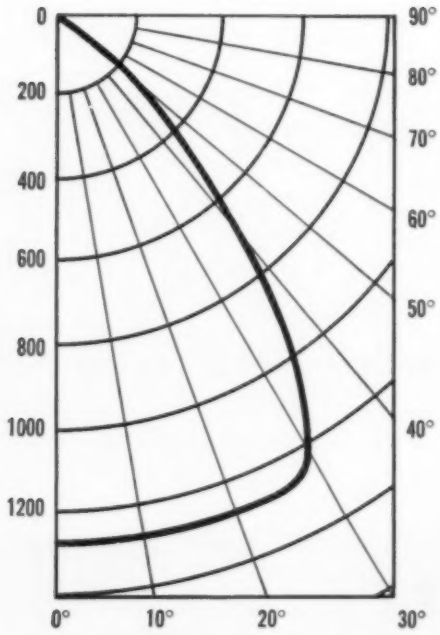
ARCHITECT: GREGORY AIN, A.I.A.



Prisms are square at edges, become round toward the center. Prisms are effective throughout entire area of lens.



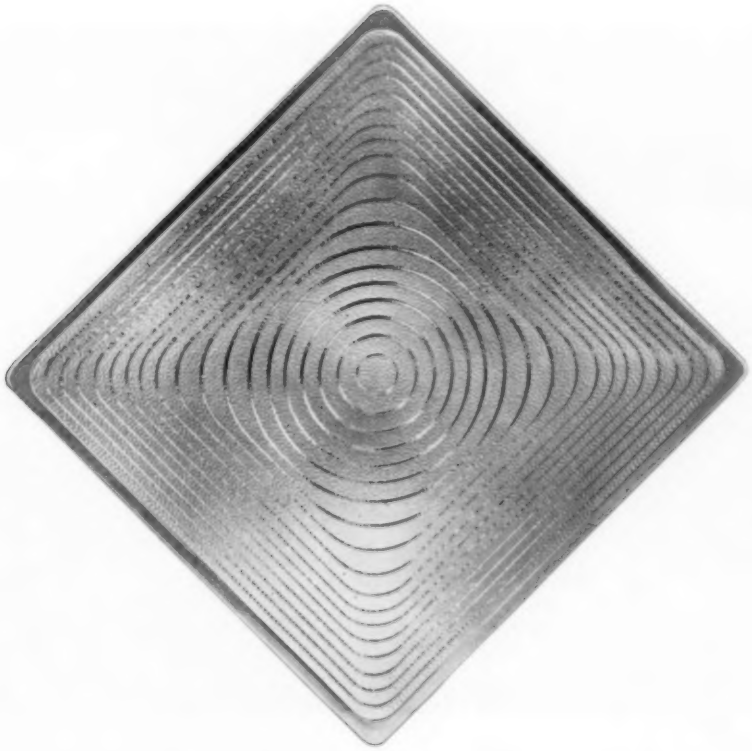

See the uniform light distribution you get with the new Corning Lenslite.

# New Corning

| CANDLEPOWER DISTRIBUTION DATA | | |
|---|---|---|
| MID-ZONE ANGLES | AVG. CANDLE-POWER AT 40 FT. | ZONAL LUMENS |
| 90°hor | 0 | |
| 85° | 2 | 2 |
| 75° | 15 | 15 |
| 65° | 54 | 53 |
| 55° | 155 | 139 |
| 45° | 396 | 306 |
| 35° | 994 | 619 |
| 25° | 1292 | 590 |
| 15° | 1233 | 350 |
| 5° | 1274 | 120 |
| 0°nadir | 1280 | |

| LIGHT FLUX VALUES | | | | | |
|---|---|---|---|---|---|
| ZONE | LUMENS | PERCENT | ZONE | LUMENS | PERCENT |
| 0°-30° | 1060 | 28.6 | 0°-90° | 2194 | 59.3 |
| 0°-40° | 1679 | 45.4 | 90°-180° | 0 | 0 |
| 0°-60° | 2124 | 57.4 | 0°-180° | 2194 | 59.3 |

| AVERAGE BRIGHTNESS | | | |
|---|---|---|---|
| ANGLE | Ft-L | ANGLE | Ft-L |
| 85 | 82 | 55 | 962 |
| 80 | 123 | 50 | 1363 |
| 75 | 206 | 45 | 1992 |
| 70 | 312 | 40 | 3060 |
| 65 | 455 | 35 | 4314 |
| 60 | 676 | 30 | 5080 |



# lenslite gives more even light distribution

## improved concave prismatic design for illumination without glare

Whenever you want to use incandescent lighting — for banks, stores, assembly halls—indoors or out—here is a new lens to consider.

Its concave design reduces the visible area of the lens at high angles. With an unusually high efficiency, the lens gets more light to the useful zone. It avoids sharp-angled beams of intense light. It gives illumination without glare.

Because it is made of a heat-resistant glass, you can use the new Corning lenslite indoors or out without fear of thermal shock.

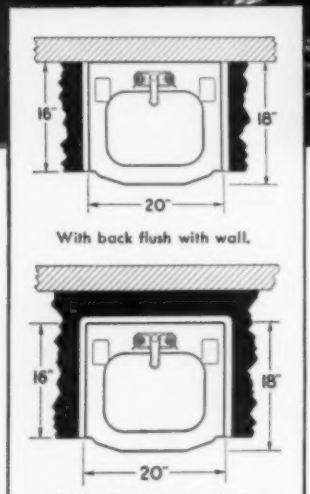
For more information on this new development in Corning Engineered Lightingware write, wire or phone us.

This cross-sectional diagram shows the concave shape of the new Corning lens.

**CORNING GLASS WORKS,** 63-8 Crystal Street, **CORNING, N. Y.**

*Corning means research in Glass*

*K-1850, 20 x 18"*




With back flush with wall.

With counter surrounding back and sides.

Metal side strips or a U-shaped rim are used to join lavatory to counter.

# *Piedmont*

## New Kohler lavatory with extended front

### *fits counter depth of 16 inches or more*

The Kohler vitreous china Piedmont, of graceful modern design, fills the need for a counter-top lavatory of ample size, with roomy basin, that allows the economy of a 16 inch counter.

The Piedmont has a front overflow, anti-splash rim, and an integral soap dish at each side. It is available in white and six colors. The Centra combination fitting with Synchro pop-up drain is chromium plated brass.

**First Quality Only**

Slip, a mixture of clays in suspension, is tested for proper viscosity. This vital test in the production of Kohler vitreous china fixtures insures castings of uniform strength and weight.

Kohler Co., Kohler, Wisconsin. Established 1873

**KOHLER OF KOHLER**

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION CONTROLS

# FROM CURTAIN WALLS TO LETTERING ON TOWER... ALUMINUM FABRICATED BY

# CUPPLES

**Home Office Building**
**UNITED SERVICES AUTOMOBILE ASSOCIATION**
**San Antonio, Texas**

Atlee B. and Robert M. Ayres, Phelps & Dewees & Simmons, Architects, San Antonio

Henry C. Beck Company, General Contractor, Dallas

This imposing Texas marble and aluminum structure points up both the versatility of aluminum and Cupples' complete facilities for design and fabrication.

These Cupples' aluminum products are used in this contemporary office building:

- **North and South Walls.** Aluminum curtain wall—tubular projected windows, thermopane-glazed, set over blue panels. Vertical tubular mullions and continuous extruded solar shades.
- **East Elevation.** Vertical aluminum fins contrasting with dark gray aluminum panels and tubular rails.
- **West Elevation.** Balconies of aluminum extrusions with contrasting cast aluminum panels on the exterior, blue panels with aluminum base trim on the interior.
- **Other Cupples' Aluminum Items.** Doors and storefronts, extruded vertical adjustable louvers, eggcrate canopies, column covers, coping, ornamental aluminum rails and cast aluminum lettering on tower. All in alumilite finish.

If your plans include aluminum—whether for curtain walls, windows, doors, ornamental products, or Alumi-Coustic grid systems for suspended ceilings—we welcome your inquiries. You'll discover that Cupples' high standards of design and manufacture always meet or exceed your most rigid requirements without premium costs.
Our catalogs are filed in Sweet's.

**Cupples** PRODUCTS CORPORATION
2660 South Hanley Road • St. Louis 17, Missouri

## When you add all of this

Sunset View School
Point Loma, Calif.
*Architect:*
Samuel W. Hamill
San Diego

## to this room...you add happiness

Isn't there a big happy feeling about this classroom? So light, bright and airy. It's the Daylight Wall that does it . . . with its clear glass from sill to ceiling.

In a recent research study, 44 out of 45 teachers were enthusiastic about big window areas. Here are some typical comments:

"The lighter, brighter surroundings create a good environment for learning."

"Students do not get tired and restless, because there is no feeling of confinement."

And most of the teachers were quick to admit that they, too, were a lot happier in classrooms like this. Wouldn't *you* be?

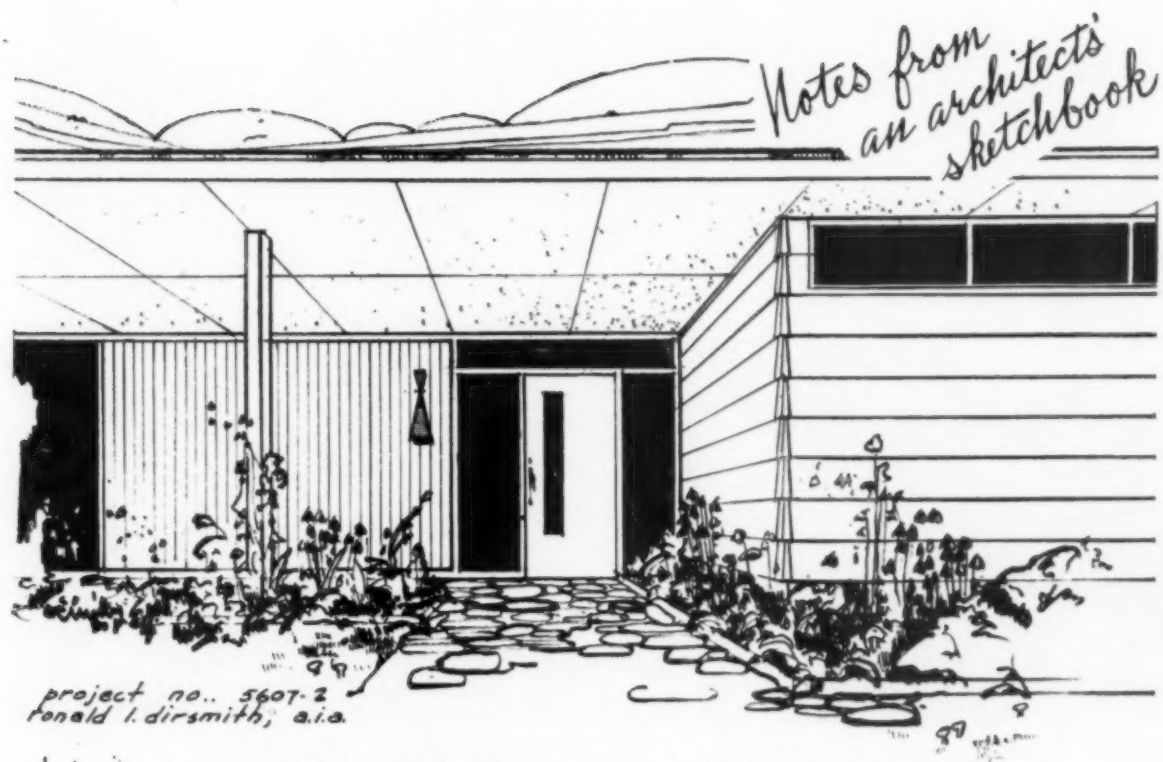
We think you'll find the complete research report by Paul R. Hensarling, Director of Administrative Research and School Community Relations for Port Arthur, Texas, mighty interesting.

If you'd like, we'll also send you our authoritative, illustrated book that discusses the important things to consider when you're planning school daylighting. Write to Dept. 4586, Libbey·Owens·Ford Glass Company, 608 Madison Ave., Toledo 3, Ohio. And feel free to call your Libbey·Owens·Ford Glass Distributor or Dealer (listed under "Glass" in the yellow pages) for cost estimates and other help.

LOF GLASS

# DAYLIGHT WALLS

LIBBEY • OWENS • FORD *a Great Name in Glass*

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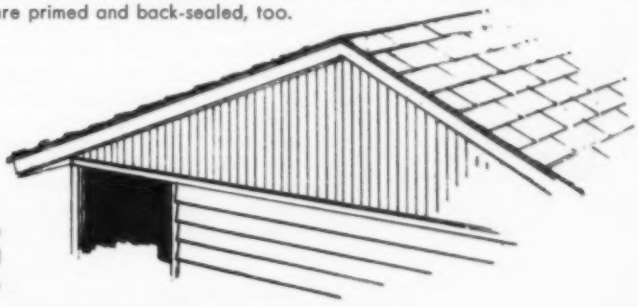
WITH **MASONITE EXTERIOR PRODUCTS**

**DISTINCTIVE ENTRYWAY**

Every exterior can be distinctive—when you work with Masonite's broad selection of top-quality siding materials. They defy time and the weather.

**NO VISIBLE NAILS**

Never a blemish on strong, straight Shadowvent® Siding. Aluminum mounting strip speeds application, creates attractive shadow line. Panels are primed and back-sealed, too.



**HANDSOME GABLE ENDS**

Masonite Panelgroove adds character to gable ends, accent areas and short runs. Shiplapped edges for a continuous pattern without visible joints. Grooves are 4" o.c.

Custom quality protection and appearance for homes in every price bracket. Savings in original cost, in application and painting, in maintenance. Read about these dense, grainless panels in Sweet's, or consult your file (A.I.A. 23-L) or send the coupon today.

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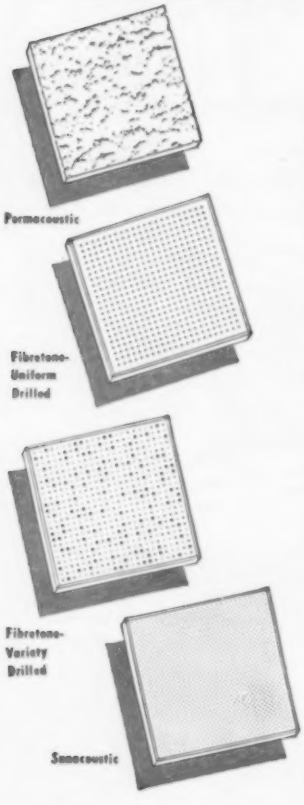
Name.....
Title.....
Firm.....
Address.....
City.....State.....
Zone.....County.....

The Johns-Manville Permacoustic ceiling in the Penn Fruit Co. supermarket in Cynwood, Pa., is handsome, acoustically functional and inexpensive.

# *Sales soar when Johns-Manville Acoustical Materials Quiet busy stores*




Business and industry depend on modern materials to achieve maximum efficiency. That's why practically all new building and modernization specifications include acoustical ceilings to reduce disturbing noise.

Johns-Manville offers a complete choice of highly efficient sound absorbing materials for every acoustical need.

- **J-M Permacoustic® Units**—combine maximum acoustical efficiency with architectural beauty. Has attractive fissured surface. Made of mineral wool, Permacoustic meets all building code fire-safety requirements.
- **J-M Fibretone® Units**—provide high acoustical efficiency at modest cost. Hundreds of small holes, drilled in a Uniform or Variety pattern, act as "noise traps." Fibretone has a white paint finish. Available with flame-resistant finish.
- **J-M Sanacoustic® Units**—perforated metal panels backed with a fireproof, highly sound-absorbent element. Noncombustible and sanitary. The white baked-enamel finish is easy to keep clean, and may be repainted.
- **J-M Transite® Acoustical Panels**—perforated asbestos-cement facings backed with a mineral wool sound absorbing element. Suitable in areas with high humidity (dishwashing rooms, kitchens, swimming pools, etc.).

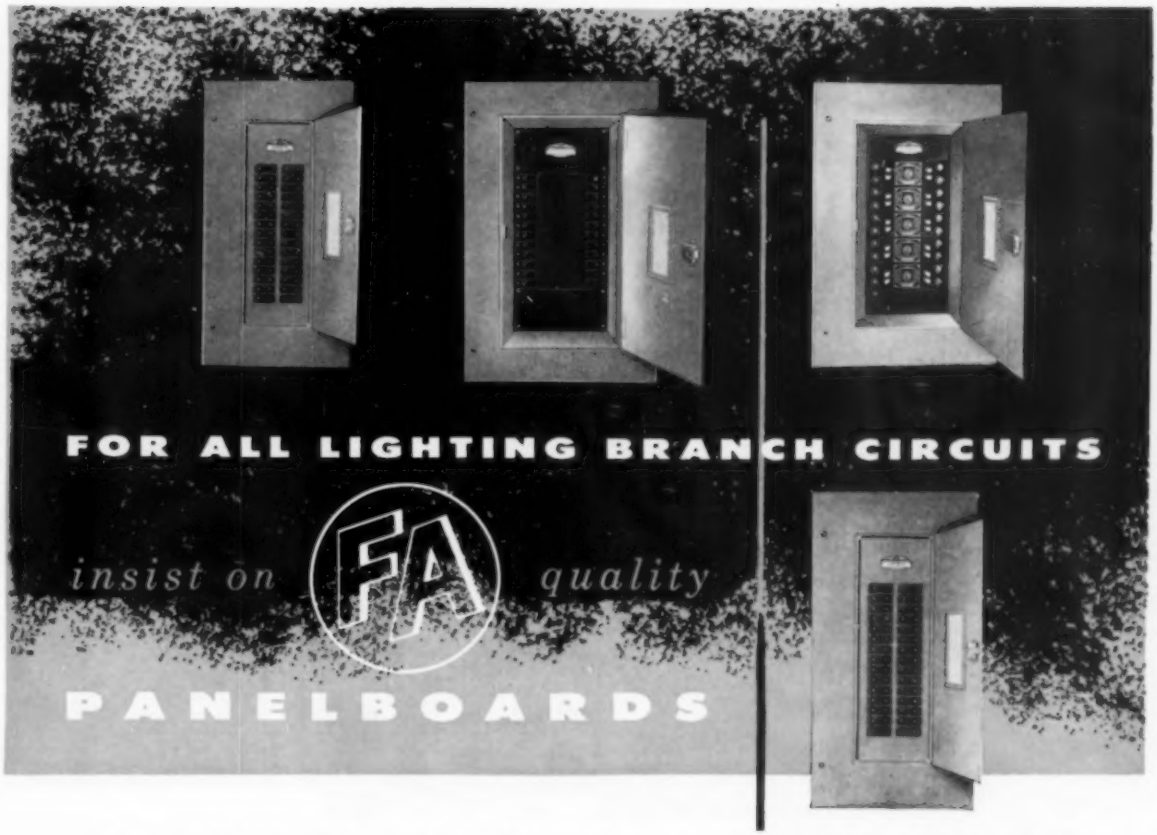
Send for your free copy of the new brochure entitled "Sound Control." Write Johns-Manville, Box 158, Department PA, New York 16, New York. In Canada, write 565 Lakeshore Road East, Port Credit, Ontario.

JOHNS-MANVILLE JM PRODUCTS

**See "MEET THE PRESS" on NBC-TV, sponsored alternate Sundays by Johns-Manville**

## Johns-Manville

**45 years of leadership in the manufacture of acoustical materials**




Safe, dependable, long-lasting and trouble-free panelboards for lighting branch circuits and other similar needs are a FA specialty.

Listed by the Underwriters' Laboratories, Inc., for label service FA Lighting Panelboards are standardized in design, but tailored to fit any need. Column type and Dustite also available.

FA Lighting Panelboards are of two types — the Circuit Breaker and Switch and Fuse virtually all have been specifically designed to make additions of circuits and changes in capacities an easy task. Another popular feature is that virtually all are of the panel base assembly type which means all components are packaged for quick, easy assembly on the job.

Capacities of the Circuit Breaker type are 10, 15, 20, 30, 40, and 50 amps., 4 to 42 poles with main lugs or circuit breaker, 3 wire single phase or 4 wire, three phase. Switch and Fuse capacities are 30 amps., 8 to 40 S. P. circuits with main lug or safety type main fuse disconnect for 3 wire single phase, 115/230 volts and 4 wire three phase, 120-208 volts. All circuit breaker and switch and fuse units are of the quick make and quick break type.

Insist on FA Panelboards for all lighting branch needs. Contact your nearest FA representative listed in Sweet's for further information.

## CHOOSE FROM THESE FOUR TYPES

**QP QUICKLAG P,** a plug-in thermal-magnetic circuit breaker type. Features FA QP Quicklag P circuit breakers which provide safe, dependable protection against service interruptions caused by harmless, momentary overloads, short circuits or severe overloads. Screwless assembly, pressure type connection between circuit breaker and bus bar and sequence bussing are other features.

**QS QUICKLAG S,** a thermal magnetic circuit breaker type with screw connection to bus bar. Features QS Quicklag S Circuit Breaker with trip free handle for protection against momentary or abnormal overloads and short circuits.

**TM,** a thermal-magnetic circuit breaker type with FA design magnetic blowout. Trip-free handle of FA T-M circuit breaker provides automatic circuit protection against harmless, momentary overloads, short circuits and severe overloads.

FA **LNTP,** a switch and fuse type panelboard. Combines single pole fuse and heavy duty tumbler switch in four circuit standardized sections.

*Frank Adam Electric Co.*

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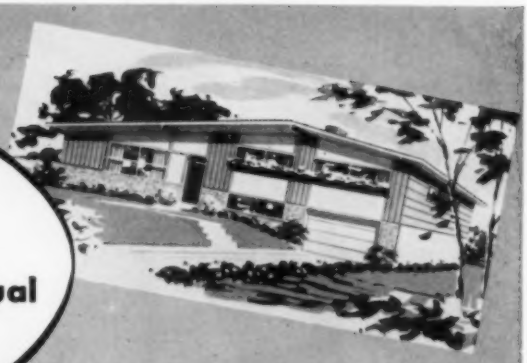
*makers of:*
*busduct • panelboards • switchboards*
*service equipment • safety switches*
*load centers • Quikheter*

# AllianceWare

**helps make possible these unusual homes at budget prices**



**TYPICAL HOMES IN PLYMOUTH MEETING PARK DEVELOPMENT**

*Architect:*
Howard O. Krasnoff
*Builders:*
Fox-Bilt Homes, Inc.
*Plumbing Contractor:*
National Plumbing & Heating Co.
*Plumbing Wholesaler:*
H. B. Pancoast Co.

**All Fox-Bilt Homes include these AllianceWare fixtures—*in color*—Champion Bathtub, Two Linda Lavatories and Two Closet Combinations**

Two Philadelphia builders—Bob and Dick Fox—have always dreamed of homes—priced within the reach of most families—that would contain many of the luxurious details generally found only in more expensive dwellings.

Today—in Plymouth Meeting Park—suburban Philadelphia—Fox-Bilt Homes, Inc. is erecting the first group of 315 unusual split-level homes containing many of the Fox Brothers' ideas.

Designed to sell at a low $14,850, these homes incorporate many luxury features . . . among them AllianceWare Champion bathtubs—two AllianceWare Linda lavatories and two closet combinations in each home. All AllianceWare fixtures are in color.

Fox Brothers chose AllianceWare, they tell us, because of AllianceWare's quality construction, decorator styling and wide color selection—sound reasons why they expect AllianceWare bathrooms to be an important sales feature of their unusual homes.

AllianceWare
PORCELAIN ON STEEL

**ALLIANCEWARE, INC. • Alliance, Ohio**
***Bathtubs • Lavatories • Closets • Sinks***
Plants in Alliance, Ohio; Colton, California; Kilgore, Texas

# RIGID STEEL BENTS FORM BASIC FRAME OF WHEATLEY SCHOOL, EAST WILLISTON, LONG ISLAND

## Boxed and Exposed J&L JUNIOR CHANNELS give classrooms clean, fresh appearance

Architect W. Frank Bower, Jr., of La Pierre, Litchfield & Partners, New York, has employed 130 tons of Junior Channels in the new two million dollar Wheatley School (East Williston, Long Island Junior-Senior High School). The 12″, 10.6# Junior Channels are boxed to make rigid bents forming the basic frame of the classroom buildings.

The bents were fabricated in two sections by De Voe Iron Works, Inc. of Long Island City, then trucked to the job. Erection went fast. Mr. Stephen J. De Voe, Jr. reported that it required only five hours to erect the 56 bents in one 232′ x 71′-4″ building.

Mr. Bower summed up the advantages of using J&L Junior Channels in the school's unique design by saying:

"The exposed structural steel bents or rigid frames are the basic frame of the building. This was done to take advantage of insulating cement and wood fiber structural plank which has excellent acoustical properties. In addition we avoid the use of hung ceilings. As a result we estimate savings of $40,000 to $50,000 on this $2,000,000 building.

"This type of construction eliminates the confined air space between roof and hung ceiling which, unless mechanically ventilated, stores hot air to reflect heat on the classrooms in the warmer months. The rigid frames give a cleaner, fresher look than alternate materials. We prefer them as being more interesting than the usual flat hung ceiling. They also give us a chance to introduce more color into the classrooms."

If you're designing light occupancy buildings, ask us for complete information about J&L Junior Channels. Take advantage of the strength of these light weight hot rolled sections, and their adaptability to a wide range of architectural design.

**Jones & Laughlin**
STEEL CORPORATION·PITTSBURGH

Artist's rendering of the Wheatley School

# DESIGNED

*the way you see it*

With Texlite's complete Integrated Wall System, your original and out-of-the-ordinary design ideas become feasible and practical. So complete and flexible is this new wall framing system that possibilities are virtually unlimited for new effects in design, color and texture. It will inspire you to create buildings with individuality and beauty . . the way *you* see them. The Integrated Wall System is designed, engineered, fabricated and erected by Texlite — undivided, responsibility. Send for illustrated brochure.

*See our catalog in Sweet's.*

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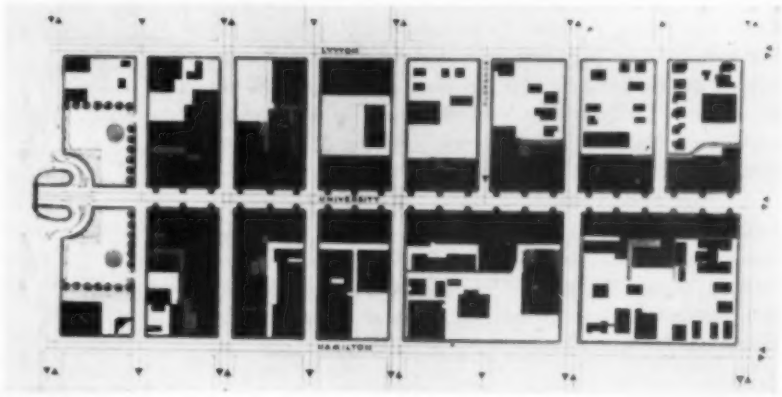
# ARCHITECT PLANS HIS OWN COMMUNITY

The Palo Alto, California, press has accorded a great big hand to the Office of Ernest J. Kump, local Architects-Planning Consultants, for proposals for the development of the community's downtown business area. Organized in three stages, the scheme not only has the merit of being possible to initiate at any time (since it respects the existing street pattern), but also offers a vigorous challenge to the validity of the now-prevalent concept of the ideal shopping center as a vast, de-centralized group of buildings set down in a sea of parking acreage. In addition, it constitutes a realistic approach that any number of communities confronted with aggravated cases of "downtownitis" might apply. John C. Worsley of the Kump office deserves special credit for development of the proposal, which is currently pending before the City Council.

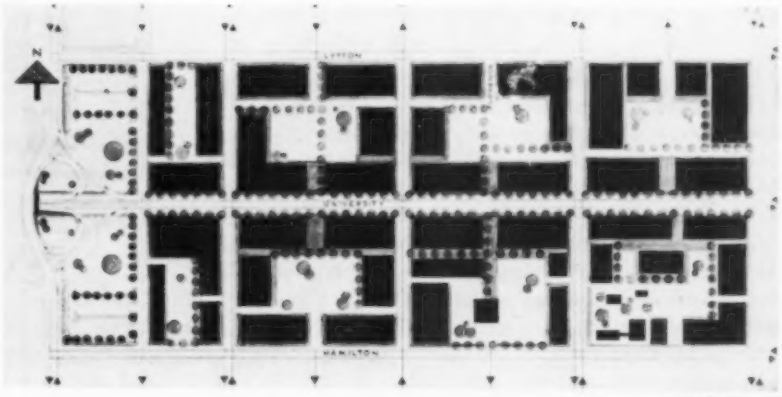
STAGE 1 represents the situation as is, with the exception of advocating that every other north-south street become one-way, with diagonal parking instituted to increase number of parking spaces. University Avenue, the central east-west thoroughfare, is the present traffic-clogged business center of town. At the western end is an existing traffic rotary and underpass.

In STAGE 2, some north-south streets are closed at their intersections with University Avenue, and the basic pattern of the eventual proposal begins to emerge —a series of two-block "shopping units," each with self-contained, interior parking, accessible from the bordering east-west streets. The traffic circle and underpass area are enlarged and improved, and landscaped parking lots are introduced at either side.

In the final STAGE 3, University Avenue is wholly closed to traffic, becoming a pedestrian mall; and (at the center) a public square provides cohesiveness to the whole. Shoppers may park very near the first shop to be visited, while walks through to and along University Mall place the whole area within pleasant walking distance. In a conventional shopping center, if buildings are expanded, parking space must be decreased or pushed farther away, either solution defeating its purpose. In the Kump scheme, the pattern of two-block units could be extended indefinitely, by just stepping over a couple of blocks and repeating the same general arrangement.

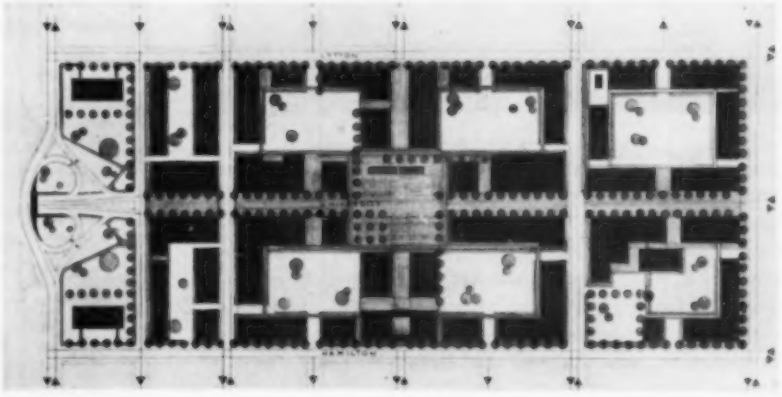


STAGE 1



STAGE 2

STAGE 3



# News Bulletins

• A $480,000 study to examine economic forces and population trends that will influence development of New York-New Jersey-Connecticut metropolitan region in next 25 years will be started this summer by special staff organized by Harvard University's Graduate School of Public Administration. Three-year study under egis of Regional Plan Association, is financed by equal grants from Rockefeller Brothers Fund and Ford Foundation. . . . In New York City, itself, City Planning Commission headed by James Felt, will conduct $150,000 study for replacement of antiquated zoning laws. Project, to be carried out with aid of consultant, will consider proposals made in 1951 report —"Plan for Rezoning"—by Harrison, Ballard & Allen, and aim to replace current 1916 regulations.

• Douglas Fir Plywood Association has commissioned 16 well known architects and educators to do creative research and develop designs for schools, churches, homes, and leisure-time retreats. Announcement was made at annual meeting of western fir-plywood industry held in June.

• Applications for 1957 Arnold W. Brunner Scholarship—$2,400 grant for advanced architectural study in specialized field—will be accepted by New York Chapter, AIA, until Nov. 15. Request full information at N. Y. Chapter Office, 115 E. 40 St., New York 16, N. Y.

• Initial step in campaign to attract convention business to Las Vegas, Nev., is Clark County Convention Center (below), $4-millions hall for conventions, exhibitions, and sports events. Thin-shell concrete dome, 440 ft in diameter, will roof arena large enough to seat 6000 persons; in addition, building will feature newest in radio, TV, and communications equipment. Designed by Adrian Wilson & Associates, Architects-Engineers, Convention Center is first phase of huge civic center expected to cost $15 to $20 millions. . . . Detroit is also bidding for portion of lucrative convention

business. Ground was broken last month for Convention-Exhibit Building (right)—said to be largest project of its kind in the world. Circular arena section, seating 14,000 persons, will be used for political conventions, civic affairs, and sports events; rectangular section contains 33 meeting rooms adjacent to exhibition area of 1,600,000 sq ft. Convention-Exhibit Center, located near Detroit's civic center development, was designed by Giffels & Vallet, Inc., L. Rossetti, Associated Engineers-Architects.

• Contemporary, Pre-Columbian, and Colnial architecture of Mexico will be included in seminar tour planned by Mexican Society of Architects for October. For information write: T. H. Hewitt, 2413 Driscoll, Houston, Tex. . . . 1st International Meeting of Young European Architects will take place at Idstein/Taunus near Frankfurt, Sept. 3-8. A limited number of young American architects are encouraged to participate by Association of German Architects and Construction Engineers, sponsoring meeting. For details write: BDB, Koblenzer Strasse 74, Bonn. . . . Tours of housing in Europe and Israel are being planned by National Housing Conference for this September. Write: NHC, 1025 Connecticut Ave., N. W., Washington, D. C., for information.

• National Swimming Pool Institute, organized to promote nationwide use of pools and establish standards of construction and safety, held first convention in Chicago on June 27. Send all inquiries about pools to NSPI, c/o Morris B. Rotman, Harshe-Rotman Inc., 8 S. Dearborn St., Chicago 3, Ill. . . . An estimated $94 millions will be spent on more than 30,000 pools this year, according to Swimming Pool Age.

• Recommendations to retain and enlarge Engineering Societies Center in Manhattan were recently disclosed by special committee representing five principal engineering organizations. Attempts will be made to use existing facilities on 39th and 40th Sts., but a comparable site will be sought if necessary. Committee also recommended that United Engineering Trustees, Inc., be authorized to raise money for Center and employ architects.

• New additions to AIA headquarters staff are: Joseph Watterson, named Director of Publications; Theodore W. Dominick, now with the Department of Education, Research and Professional Development; and Betty Farwell, appointed to new position of Slide Librarian in AIA Library.

• New York Chapter, AIA, has awarded its 1956 LeBrun Traveling Fellowship—$3000 grant for six months' travel and study in Europe—to John Pawlikowski, of Chicago. . . . Alan Hamilton Rider, Bloomfield Hills, Mich., has been named winner of Beaux-Arts Institute of Design's Lloyd Warren Scholarship — $5000 for 18 months' travel and study. . . . Klaus H. Kattentidt has been given $3000 James Harrison Steedman Fellowship, administered by Washington University, for one-year's travel and study abroad.

Lens-Art Photo

• Results of competition sponsored by The Morton Arboretum, Lisle, Ill.—for design of small homes integrated with surrounding landscape—were recently announced. Winner of $1000 Grand Prize is Gardner Ertman, Cambridge, Mass., for his compact, two-bedroom design (above). Four $500 First Prizes went to: Charles S. Sax, Hibbing, Minn.; John O. Cotton, Minneapolis; Hayahiko Takaso, Cambridge; and (again) Gardner Ertman (for a second entry). Six houses, to be designed by competition winners, will be erected at The Arboretum as permanent exhibit of landscape design.

• Ulm School of Design, West Germany, will enroll first U.S. students this autumn, one year after U.S. grant of $250,000 made its official opening possible. Walter Gropius is a member of school's curatorium. Like the Bauhaus, new school is international in character and intent but, unlike the former, it will stress technical rather than fine-arts instruction. Industrial and graphic design, architecture, and social sciences form the basis of study.

• In Philadelphia's Commercial Museum, permanent exhibit of city planning—PHILADELPHIA PANORAMA—is now open to the public. Designed by Architect Oscar Stonorov, display includes large reversible model of downtown Philadelphia; one side shows conditions existing now, other indicates plans for the future.

• Circular building for Stamford Day Nursery (below)—to replace old structure across the street—permits more unified control of interior areas and playground. Four classrooms receive cross-ventilation through clerestories opening onto interior courtyard; offices are provided for director, doctor, case worker, and faculty; custodian's apartment and garage are located in separate wing. Nursery, for pre-school-age children from broken homes, was designed by Architect Lester Tichy.

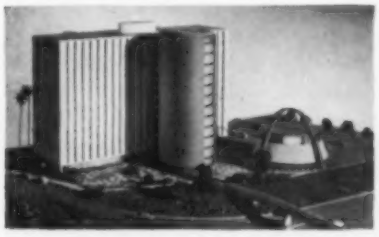
• Grant of $1800 from New York Community Trust will enable Municipal Art Society of New York to bring up to date, and supplement with photos, its "Index of Architecturally Historic Structures in New York City." Present listing, about 60 percent complete, is limited to buildings of national and/or local importance erected before World War I.

• Starting this fall, Cooper Union's Department of Architecture will offer a four-year program—which will qualify graduates to earn degrees with one additional year of work at an accredited school of architecture. It is hoped that a degree course can be instituted by 1959, Cooper Union's Centennial Year.

• Latest reports from U. S. Dep'ts. of Commerce and Labor show outlays for new construction running close to $44-billions figure predicted for '56. Decreases in private residential construction were more than compensated for by rises in private industrial projects, up 35%; commercial building, up 17%; highway work, up 21%; and miscellaneous public-utility construction, 73% above expenditures for June of last year. Despite dip in housing starts—1,150,000 new dwelling units are expected for '56 as compared to 1,310,000 in '55—most authorities predict that dollar volume won't drop proportionally because of demand for larger homes and increased construction costs.

• Construction Industry Center (below) will draw all segments of Los Angeles' building industry into one headquarters when it is completed in fall of 1957. Sponsored by Building Contractors Association, $5-millions Center will provide space for product manufacturers, financial organizations, architects, and trade and professional associations. Project, designed by Architect John C. Lindsay will include 13-story office building as well as 13-floor elliptical Tower of Exhibits, graphic-arts center, restaurant, and tri-level parking facilities.

*Herbert Bruce-Cross*



• The Michigan Society of Architects will hold a one-day architect-educator conference on school planning at University of Michigan, Ann Arbor, Mich., Nov. 1. William Caudill and John Lyon Reid will participate.

• Deadline for entries in competition for design of Sanctuary of Madonna delle Lacrime, Syracuse, Italy, has been postponed until Jan. 31, 1957 (see NEWS BULLETINS October 1955 P/A).

# Financial News

**by William Hurd Hillyer**

The effect of economic function on architectural design is at present most strikingly shown in the banking field. This fact doubtless stems from the day-to-day changes and developments, inside and outside the walls of banking structures, having to do with "automation" accounting methods and with customer-traffic patterns. Arresting examples of this impact are afforded by two new bank buildings, respectively, in Florida and South Carolina. The Coral Gables First National has recently gone underground to the extent of a 403-foot tunnel connecting its main banking house with a nine-window drive-in "facility" and augmenting the closed-circuit TV connection between the facility and the main office bookkeepers. At Spartanburg, the Citizens & Southern National's new main office has roof parking space with room for 31 cars, reached from the banking room by means of stair and self-service elevator (Hudson & Chapman, Spartanburg, Architects).

• A novel home-improvement financing plan has been developed by the Bank of Westchester, White Plains, N. Y., in co-operation with 300 lumber retailers and wholesalers. By making arrangements through a lumber dealer, the home owner can borrow $200 to $5000 at a 5% discount rate, repayable in not more than 36 monthly instalments. No down payment is required. Financing covers materials and labor. In its advertising the bank directs prospective improvers to their respective building-supply firms. Such concerns, unfamiliar with consumer-credit financing procedures, have all relevant problems taken over by the bank. Its officers regard the plan, which may spread nationwide, as a simplified tool for sound residential improvement and therefore of interest to architects everywhere.

• Disquiet is manifest in high quarters over the continued "unsustainable" rise of personal and individual debt, which soared $331 billions in May, a record breaker for the year. The Federal Reserve Bank of Cleveland computes that, if instalment debt and disposable income were each to continue increasing at the average percentage rate of the past four years, such debt, by 1965, would require more than one-third of disposable income for its servicing. Other banking authorities see personal debt as an "automatic unstabilizer" of major proportions. According to this view, the economic organism seeks stability by periodically reducing the consumer debt; in other words, when people start finding the payments difficult to meet, they cut down their purchases rather than default.

• Reassurance is lent to the consumer-credit outlook by Paul L. Selby, executive vice-president of the National Consumer Finance Association. The American Consumer is so far from being broke that his current assets are 20 times his current liabilities, the finance expert shows. Though the ratio of debt to disposable income has risen of late years, the study reveals that financial planning and budgeting have taken the place of impulse buying. "Pride of ownership" in homes and their appurtenances has thus been reinforced.

• Coincident with the record-breaking number of new churches now being built, or on architects' drafting boards, comes word from stained-glass studios—now achieving a $10 millions annual volume—that foreign competition is an unsettling factor in this 90% handicraft field. Completed foreign windows come in duty free, if they're valued at more than $15 a square foot, which is the 1920 figure now obsolete in these $20-$175 square foot days. U.S. studios want floor raised to $45. Makers report demand for "traditional" and "contemporary" designs about evenly matched.

• Third-quarter economic outlook is far from pessimistic. The general cave-in, so "confidently feared" in certain quarters a month ago, is now postponed by common consent, despite the steel strike and other disturbing factors. Depressing effects on consumer buying and business spending are not considered likely, says First National City Bank of New York, reporting business conditions up to July as indicating no spread and perhaps some improvement in the soft spots. Rising income and a 2-1/2 millions employment gain, the bank declares, "provide a strong underpinning." Number of new private homes for 1956, it announces, is estimated at 1,150,000. In similar spirit, the Guaranty Trust Company of New York points to Federal Reserve operations tending toward easier money and a month-long decline in rates on Treasury and commercial bills.

• Some observers see a casual, almost-collusive approach to the steel strike on the part both of labor and management, as if so sinister an entity were something that could be lightly summoned and dismissed. The mere fact that such a frame of mind seems possible is in some ways more disquieting than the strike itself. Such observers see a possible willingness to court false deflation, at a time when increased tangible production is the only anti-inflation panacea. Obviously, the strike will lay a heavy hand on the entire construction industry but, for the time being, its effect upon the architectural profession will be slight.

• "King-size headache" is the way Chicago's Federal Reserve Bank describes the problem of making safe and comfortable both big-city and suburban living. The three largest metropolitan areas are served by some 500 governmental units, the next 30 by an average of 100 each with their several ordinances and regulations. The architect's task is made more difficult in consequence, but at the same time his professional function becomes demonstrably more indispensable.

Current survey by the Federal Reserve Bank of St. Louis reveals a marked economic-activity shift due to the faster growth of the suburbs as compared with urban centers. Population of 168 metropolitan areas increased only 14% from 1940 to 1950, while the outlying parts rose by 35%. With the suburbs of yesterday being engulfed by central urban areas today, design of retail and residential units is acquiring a fluidity of its own.

# BERLIN'S INTERNATIONAL BUILDING EXHIBITION 1957

**by Sibyl Moholy-Nagy***

The young Goethe, visiting what was to be 100 years later the capital of the German Reich, wrote back to staid Frankfurt: "In Berlin lives a reckless breed!" And this is still the keynote by which Berliners differ from Germans. They are irreverent and indomitable. These two characteristics have provided the best, one might say the *only* good jokes in the German language, and the best and worst in metropolitan architecture. The palazzos of the *nouveaux-riches* inhabitant, of the "Kaiserliche Berlin" outdid in their lusty vulgarity the combined efforts of Charles Garnier and Cass Gilbert. But in this same town, Behrens established valid principles for modern architecture in his Turbine Factory. Mendelsohn designed his best building (Columbus House) and the low-cost housing projects of the Brothers Taut, of Gropius, and of Scharoun were decades ahead of anything done in this or any other country. It is therefore not surprising that the most ambitious replanning and rebuilding project of postwar Germany should be attempted here, and that its visual reality—as far as can be judged at this moment—should bear all the promise and the imperfection of Berlin's irreverent, indomitable past.

The Senate of Berlin has decided on an International Building Exhibition, to be held in 1957. A whole town sector will serve as demonstration area. Following the world-famous example of Stuttgart, where in 1927 an International Building Exposition was staged by inviting the leaders of the profession to design permanent houses according to the latest ideals and techniques, a large building complex will be in the process of construction next year. Approximately one-third of the planned buildings will be complete or nearing completion; one-third will be partially built; and one-third will be in the earliest stages of excavation and foundations. Everything seems to be against a plan of such magnitude: an almost totally destroyed town **(1)**, the isolated existence of Berlin as an enclave in Russian-dominated territory, an economy paralyzed by political pressure, lack of raw materials, and complicated communication with free markets. But the old Berlin *Dafke*—the indomitable lust of self-assertion, is still stronger than all these impediments.

This rebuilt sector will form the new *Hansa Viertel*, a "preferred neighborhood" to serve the Diplomatic Corps and professional groups. It will replace the old *Geheimratsviertel*, an exclusive aristocratic quarter which was wiped out by bombs. The project got under way with a competition for the over-all plan, authorized by the Senate early in 1953. The given conditions were a cleared area, equalling approximately 12 city blocks, bordered on one side by the River Spree and on the other by the Tiergarten Park—the so-called "lung of Berlin." The most restricting factors were an elevated railroad, bisecting the area, and three main thoroughfares converging at two points in given intersections. Some 340 single land titles had to be cleared and combined, involving an immensely complicated legal procedure with many of the title holders dead, missing, or in the four corners of the earth. The competition did not call for detailed house types because it had been suggested that the design of individual buildings should be offered to the leading architects of today. Specified were building capacity—

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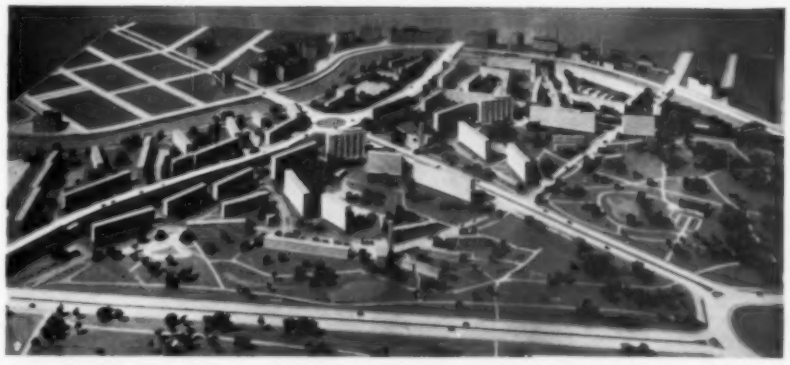

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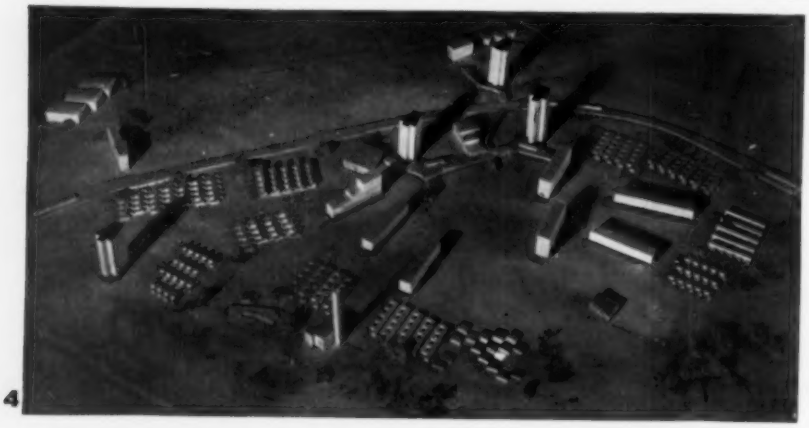
*Associate Professor at Pratt Institute School of Architecture, lectured extensively at West German Universities during Summer Semester, 1955.



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one-third "bachelor"-type apartments, one-third medium-size, and one-third large-size units. Height and site orientation were to have the greatest possible variety. The first prize, awarded in December, 1953, went to a project by Kreuer, Jobst & Schliesser, Berlin **(2)**. It is based on a "free-form" plan. Building groups are emphatically isolated, with an average height of eight stories and astonishingly uniform plan patterns. The over-all view presents a loose arrangement, deriving its only fixed site orientation from an alignment with the elevated tracks, but skillfully utilizing the river embankment.

As was to be expected, the protests against this award were vehement. On the one side massed the *schematic* forces, whose most characteristic solution is represented by the Second Purchase Award **(3)** of W. Wiericke, Hanover. He adheres to the traditional pattern of housing projects by distributing medium-height buildings of uniform design in uniform park plots, creating approximately eight distinct neighborhoods. He keeps a healthy distance from the elevated tracks, but defeats himself by allowing no variations for the designs of the actual units. The *organic* forces, on the other hand, rallied around Hans Scharoun, Dean of Architecture at Berlin's famous Technical University, and the most imaginative (if not the most realistic) among Germany's older architects **(4)**. The guilding idea was to create "social units" in flat-roofed, family houses, clustered around central courts, while approximately half of the remaining dwelling units are skyscrapers, to avoid the old tenement heights of five to eight stories. After half a year of quibbling about the two opposite viewpoints, Prof. Otto Bartning, Dean at Darmstadt's Technical University, was commissioned to co-ordinate both principles in a compromise scheme. This rearranged plan was presented in model form in May, 1955, and constitutes—with slight variations—the basis of the final layouts **(5)**. It is interesting to juxtapose this final scheme with a plan of the prize-winning project by Kreuer, Jobst & Schliesser **(6)**. All buildings are now concentrated east of the elevated tracks, leaving the desirable area close to the river embankment units. Medium-height structures are staggered, to avoid the impression of a parallel alignment with the long high-rise façades; and Scharoun's social ideal of single-family units with interior courts gets a token consideration in a few units (left side of photo, opposite church). A puzzling and inexplicable shortcoming of the final model becomes evident in comparing it with the first-prize layout **(6)**. There, a clear attempt had been made to create independent sectors by using the dividing lines of the thoroughfares to organize neighborhoods. Since landscaping of the whole rebuilding project is in the hands of Prof. Hermann Mattern, one of the outstanding geniuses of landscape architecture today, the Jobst plan of "green core" sectors would have been most attractive. But the final plan **(5)** gives up any clearly defined areas. There is a total absence of any civic center. Volumes have been written about the need to return to the closed square. A conservative planning body like the London City Council solved the need for central orientation successfully in such projects as Clarence Gardens and Stepney Neighborhood. But the "most modern" replanning job in Europe provides no neighborhood shops, schools, or administrative facilities which would make crossing of the heavily traveled roads superfluous. A large garage was planned but has been dropped in favor of a second church—and private garage space is planned only for every third building unit. It is indicative of the over-all confusion that a church and a garage are considered

interchangeable! Looking at the master plan **(7)**, it takes little imagination to see those two main thoroughfares congested with through-traffic, since all broad streets suck in transient cars bound for other neighborhoods. And the by-roads will be lined with parked vehicles, whose starting and stopping will add to the inevitable noise of the elevated trains.

This lack of central organization has not only a civic but also an esthetic effect. Professor Scharoun, in a report, writes: "The lack of a carrying idea acted like a vacuum. It failed to unite the leading personalities, invited to participate as designers, in a common cause, and forced each of them to make his own individual design concept the sole focal point."

This brings us to the individual design of the buildings. The age-old difficulty of dealing with prima donnas asserted itself from the beginning. Mies van der Rohe alternately accepted and withdrew and, it is understood, is now willing to settle only for a cluster of one-family houses of his controversial "Prototype House" demonstrated in Elmhurst, Illinois. The greatest show of acceptance and rejection was made by Le Corbusier. He descended on Berlin with the statement: "I have no time for nonsense" (meaning that he would either be permitted to build a Ville Radieuse exactly like the Marseilles project, or not participate at all). After two days of negotiation, Le Corbusier proposed to build a paper-back edition of Marseilles, called the "Nantes Project"—but quite outside the vulgar proximity of so-much-lesser lights in the actual *Hansa Viertel*. He circled the town in an open car and finally pointed his magic wand at a spot outside the Olympic Stadium in the most exclusive part of Berlin's Westend **(8)**. Home owners there protested that a high-rise apartment block would spoil the character of the neighborhood, and the management of the Stadium pleaded that the open space had been their only parking lot, but they lost. Berliners in general, who take a violent interest in the building boom around them, objected to Corbusier's undeviating ceiling height of 7 feet and with their quick wit christened the new Ville Radieuse, "Projekt Jenickstarre" (Project Spinal Paralysis); but here the Master relented and finally agreed on an interior ceiling height of 8 feet. Typical Berlin frivolity showed itself in one of the many mix-ups for commissions. Max Taut, survivor of the famous brother-team that influenced the development of social architecture 30 years ago, was commissioned to design three individual villas, suitable for Diplomats and Capitalists. F. R. S. Yorke, London, whose work is elegant and highly individualistic, was assigned low-rent flats. When the venerable Herr

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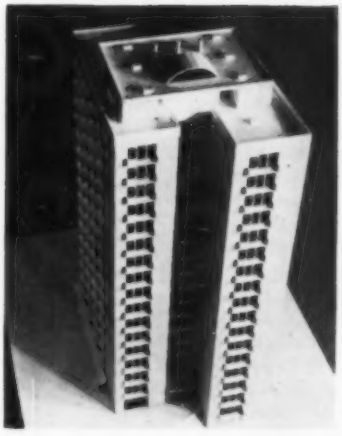
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Taut protested a blatant misuse of his life-experience, the *Hansa Viertel* Planning Commission amiably shrugged its collective shoulders and gave Taut the Yorke commission—and vice versa.

The first building to be started was the skyscraper apartment block by Müller-Rehm & Siegmann **(9)**. The 17-story tower has one-room kitchenette apartments assembled in a Z plan. Since a Berlin building ordinance allows one stair well only if each landing has an open gallery to avoid smoke congestion, the vertical communication core of the building adds to the perforated impression. Prefabricated-concrete slabs will form the exterior. Building on this "signal tower of the New Berlin," as it was christened, had to be interrupted because the two most dangerous difficulties besetting this whole scheme made themselves felt. One is the complicated way of financing a project that will need enormous investments from the Town of Berlin, from the Government in Bonn, and from private capitalists—before any



P/A News Survey

financial returns can be expected. But even after this problem had been solved temporarily, the instability of Berlin's soils made itself felt. The famous "sands of the Mark Brandenburg" make nice sentimental folk songs, but are treacherous for sinking foundations. In the case of the *Hansa Viertel*, there is an additional obstacle of subterranean muck from the River Spree. After long and costly experiments, piles (in the best Venetian tradition) were driven below ground-water level and an insulation plate of reinforced concrete was poured across them. The question arises—asked here once before, in connection with the Ciudad Universitaria in Mexico City—whether it is justified to adhere to "international" design principles (of skyscraper towers) when regional conditions do not tolerate vertical expansion. Luciano Baldessari's project for a Y-shaped apartment building of 26 stories had to be reduced to 16 for the same reason.

Walter Gropius and The Architects Collaborative have designed an 8-story apartment house **(10)** which is already under construction. The pleasant aspect here comes from a curve that projects the south of the building toward the Tiergarten Park and places four stair and elevator towers on the north side. The preference of the Berliners for balconies was well understood by the designer, who hails from the old Berlin Patriciate.

Of the two projected churches, the Protestant church by Ludwig Lemmer features an open bell tower, said to rise 240 feet **(11)**. It is a strangely proportioned building, but not really different from the strenuous church design now rampant in the U.S. A branch library by Werner Duettmann, Berlin, is the only public building mentioned in the scheme. Its patio design **(12)** promises, at least in miniature, that beneficial confinement within a well proportioned square which is so lacking in the general layout. Scharoun's restaurant **(13)** tells vividly of the undiminished delight of this old artificer in imaginative form-space relationships. No backer has as yet been found for this necessary building, but it must be hoped that it will be realized. Eye and soul will be in need of the capricious irregularity and color play, after so much glass-ribbon and concrete austerity.

The most discussed project is that of Brazil's Oscar Niemeyer **(14)**. After many propositions that were rejected by the Building Commission as alien to Berlin's climate and living habits, the final building is a piloti structure, 91 feet high, something over 45 feet deep, and with a façade of 227 feet. This, by far most impressive edifice of the whole scheme, is seen in the center of the site model **(5)**. It introduces completely new concepts to Germany. A single elevator in a separate shaft stops only on the fifth "distribution" floor and on the top floor. Six stair wells serve the individual landings. There will be 78 apartments and large community rooms, children's day rooms, and public reading rooms. The Berlin paper, *Deutsche Kommentare*, observes that the Berliner regards his apartment, quite particularly his kitchen, as his castle; and will cram a wedding party in his parlor rather than "go public." But, again, it is to the credit of the exuberant experimentalism of the Berliners that they will give a totally new concept a try-out. A curious contradiction lies in the fact that Niemeyer originally planned *brise-soleils*, which had to be omitted as unsuitable for the largely gray climate of Northern Germany; yet the 16-story apartment tower by Hans Schwippert **(15)** gives a very distinct feeling of a "crated façade." Schwippert introduces another completely new layout to Berlin. His apartments are duplex types with two-story units of a large living room

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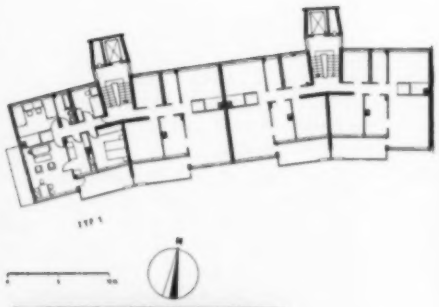

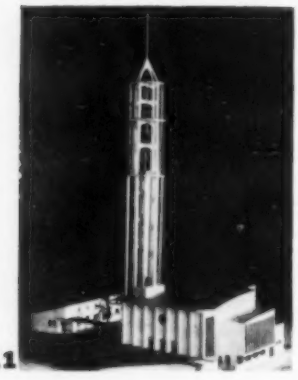

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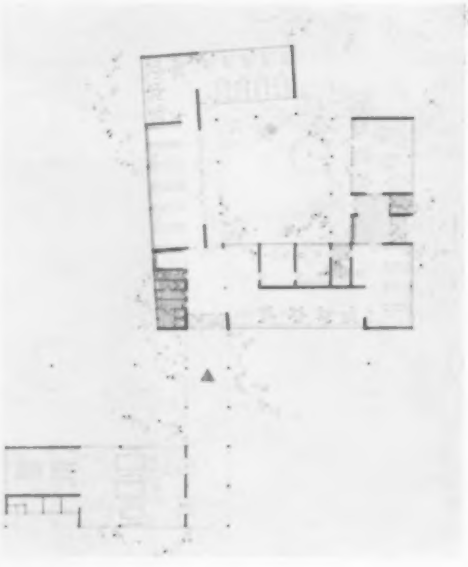

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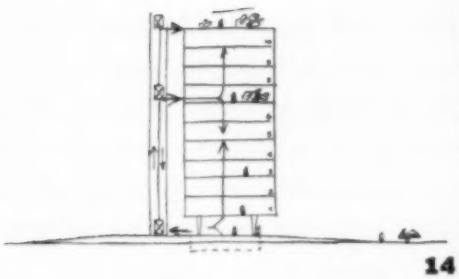

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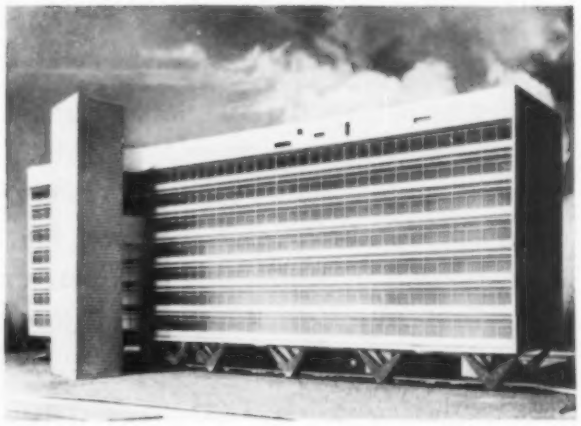

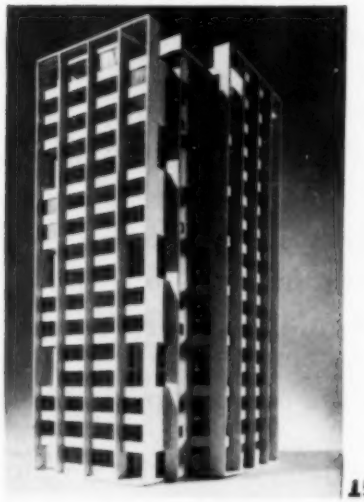

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and kitchen on one level, and 2 bedrooms on the other. The main feature is an open, 2-story loggia, meant to emphasize the feeling of a one-family house. In contrast to all the other high-rise structures, Schwippert's building will not have skeleton construction. All exterior concrete walls are loadbearing, leaving the interior free of major supports. The total height is 72 feet, with 10½" exterior walls.

Other architects whose projects have been accepted for the International Building Exhibit are: Alexander Klein, Haifa; Guenther Gottwald, Berlin; Pierre Vago, Paris; Wassili Luckhardt, Berlin; Paul Schneider-Esleben, Duesseldorf; Egon Eiermann, Karlsruhe; Fritz Jaenecke, Sweden; Alvar Aalto, Finland; Willy Kreuer, Berlin; Gustav Hassenpflug, Hamburg; Raymond Lopez and Eugene Beaudoin, Paris; Kay Fisker, Copenhagen; Otto H. Senn, Switzerland; Franz Schuster, Vienna; Sep Ruf, Munich; and several more.

Not part of the Building Exhibit, but built to serve in conjunction with the festivities planned for 1957, is the Congress Hall by Hugh Stubbins, now under construction. Temporary exhibition halls will be erected on the old exhibition grounds around the radio tower to demonstrate new building material and techniques, display appliances and furniture under the time-honored cliché, "City of Tomorrow." The "Interbau," as the Building Exhibit has been abbreviated, will open July 6 and close September 29, 1957.

## Reinhold Publishing Corporation's

# ANNUAL P/A DESIGN AWARDS PROGRAM

for projects not yet built

PROGRESSIVE ARCHITECTURE announces its fourth annual Design Awards Program, with AWARDS and CITATIONS to go to architects and their clients for PROJECTS NOW IN THE DESIGN STAGE to be built in 1957 in the United States. P/A believes that many fine design ideas need recognition in the period of design development more than after completion of the building. The Editors hope that this will encourage not only designers and owners of buildings so honored, but also others working on comparable commissions.

AWARDS will be given by a distinguished Jury to best projects chosen from ten categories—COMMERCE, EDUCATION, HEALTH, INDUSTRY, PUBLIC USE, RECREATION, RELIGION, RESIDENTIAL DESIGN, TOWN PLANNING AND REDEVELOPMENT, and INTERIOR DESIGN. Awards will be on the bases of site use, choice of structural system and materials, solution of client's program, and over-all design excellence. The Jury will assign projects to the various categories, and reserves the right to withhold an AWARD in any category, as well as to honor additional projects by CITATIONS.

FIRST DESIGN AWARD will be given for the one best project submitted.

JURY will be composed of Marcel Breuer, Architect; Gordon Bunshaft, Architect, partner of Skidmore, Owings & Merrill; Emil H. Praeger, Engineer, partner of Praeger-Kavanagh; Hugh A. Stubbins, Jr., Architect; and Harry M. Weese, Architect.

JUDGMENT will take place in New York during September, 1956. Winners of AWARDS and CITATIONS will be notified (confidentially) immediately after the Judgment.

ANNOUNCEMENT of winners of AWARDS and CITATIONS will be made at an Awards Dinner to be given in the home town (if practicable) of the recipient of the FIRST DESIGN AWARD. Winning projects will be presented in JANUARY 1957 P/A. In addition, as in past years, arrangements will be made by REINHOLD PUBLISHING CORPORATION to have the winning projects published in other magazines and newspapers, including particularly the media in home towns of all the AWARD and CITATION winners.

AUGUST 31, 1956, is the DEADLINE FOR MAILING. No application blanks are necessary. Simply send, for each project you submit, basic plans, pertinent sections, a site plan, *8" x 10" unmounted photographs or photostats* of your renderings or models (no original renderings, exhibit panels, or models, *please!*), client's name, location of the proposed building, and a brief explanation of your solution. Address, on or before AUGUST 31, 1956, to:

Awards Editor, PROGRESSIVE ARCHITECTURE
430 Park Avenue
New York 22, N. Y.

P/A will carefully guard and return all the material that is submitted.

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# URBAN DESIGN

*Condensed report of an invitation conference sponsored by Faculty and Alumni Association of Graduate School of Design, Harvard University, April 9-10, 1956.*

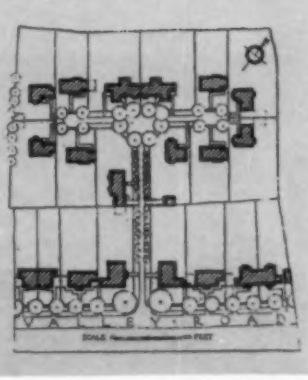
**SCOPE OF THE CONFERENCE:** "This Invitation Conference is intended to be exploratory, not didactic, and to try to find a common basis for the joint work of the Architect, the Landscape Architect and the City Planner in the field of Urban Design. In the minds of its sponsors, Urban Design is wider than the scope of these three professions, though all have vital contributions to make. In calling this Conference, the sponsors believe that others share their concern with the frequent absence of beauty and delight in the contemporary city. In much current development, mainly occupied with a quick return on investment, too little attention is given to these public needs; but there is a growing body of civic realization of the situation, of which evidence will be given at the Conference. The sponsors have avoided the term Civic Design as having, in the minds of many, too specialized or too grandiose a connotation. The professions, conscious of large scale projects ahead, have been doing considerable work in analysis and programming of urban development, providing the indispensable basis for the next stage: the shaping (or reshaping) of the American urban scene. A better knowledge of the coming physical form of the city will assist the framing of the necessary legislative and financial measures that can transform vision into reality. It is unlikely that any conclusions can be reached at this first exploratory Conference, and other meetings will have to follow." **JOSE LUIS SERT** (Dean, Graduate School of Design): Our American cities, after a period of rapid growth and suburban sprawl, have come of age and acquired responsibilities that the boom towns of the past never knew. Meanwhile, city planning has developed as a new science; city planners today are concerned with the structure of the city, its process of growth and decay, and the study of all the factors—geographic, social, political and economic—which have shaped the city. We know more about the problems of our cities than we ever did before the methods of research and analysis were adopted in this field. In fact, in late years, the scientific phase has been more emphasized than the artistic one. This may be due to a natural reaction against past practice, when city planning was based on the superficial "city beautiful" approach, which ignored the roots of the problems and attempted only window-dressing effects. Urban design is that part of city planning which deals with the physical form of the city. This is the most creative phase of city planning and that in which imagination and artistic capacities can play a more important part. It may also be in some respects the most difficult and controversial phase; and because of all these factors it has been less explored than other aspects. With the new approach to architecture, landscape architecture, road engineering and city planning, accepted formulas had to be thrown overboard. It is logical that the changes in all these fields have developed independently, each group trying to establish a new set of principles and a new language of forms. It now seems equally logical that the progress in the different professions be brought closer together, so that a synthesis can be achieved in terms of urban design. I do believe that now, after many years of individual, isolated work, we are logically coming to an era of synthesis. Like the instruments in an orchestra, these elements of urban design all have their parts to play in the total performance. The result must be harmonious and cannot be reached by individual competition. I believe we are conscious that city planners, landscape architects and architects can be only part of a larger team of specialists required to solve urban design problems; but I also believe that our three professions are already very close and that it may be easier first to come to an agreement among ourselves and then, later on, discuss the participation and relationship of the other specialists who should complete the team. The urban designer must first of all believe in cities, their importance and their value to human progress and culture. We must be urban minded. In late years we have heard much about the evils of the city—of its being a breeding place for crime, juvenile delinquency, prostitution, disease, and, of course, traffic congestion. To leave the city and live outside it has become a goal; everything good and healthy has become suburbanite. To solve the problems of the cities, our earlier city planners turned their backs to them. I should like to make a case for the city. We cannot deny that there is an American culture which is both civic and urban. The flowering of New England is inconceivable without Boston as a center. Had Philadelphia, Chicago and San Francisco not become real cities—centers of culture and learning, as well as business centers—America would not be the great country it is today. Along with over-crowded slums and ruthless speculation, we have also inherited great centers of learning, museums, medical centers, entertainment centers, which are the result of an urban culture. The younger generation in this country (perhaps resembling their grandparents rather than their parents) is less suburban minded than its elders, as it has become aware that the uncontrolled sprawl of our communities only aggravates their problems, and that the solution lies in re-shaping the city as a whole. The necessary process is not one of decentralization, but one of re-centralization. I believe that there is going to be a reversal of trends in the coming years, as interest grows in the problems of the city proper. If we are going to co-ordinate all of our efforts toward these problems of making the city a better place in which to live, and if we do not want to make the central city simply a place of business or commerce or traffic movement, then we shall have to find in man and his needs and spiritual aspirations, the measure and guide to our designs. I should recommend that all of us concerned with the problems of urban design consider man as the center of this problem; that respect for all things human be taken as the guiding factor.

Walter R. Fleischer: Harvard University News Office

*"Compare Harvard Yard with Harvard Square. In Harvard Yard the buildings are harmonious, dignified and well-scaled. The relationship to the open spaces they define is correct—Beyond the gate there is only noise, disorder, lack of visual balance, and lack of harmony."*
JOSÉ LOUIS SERT

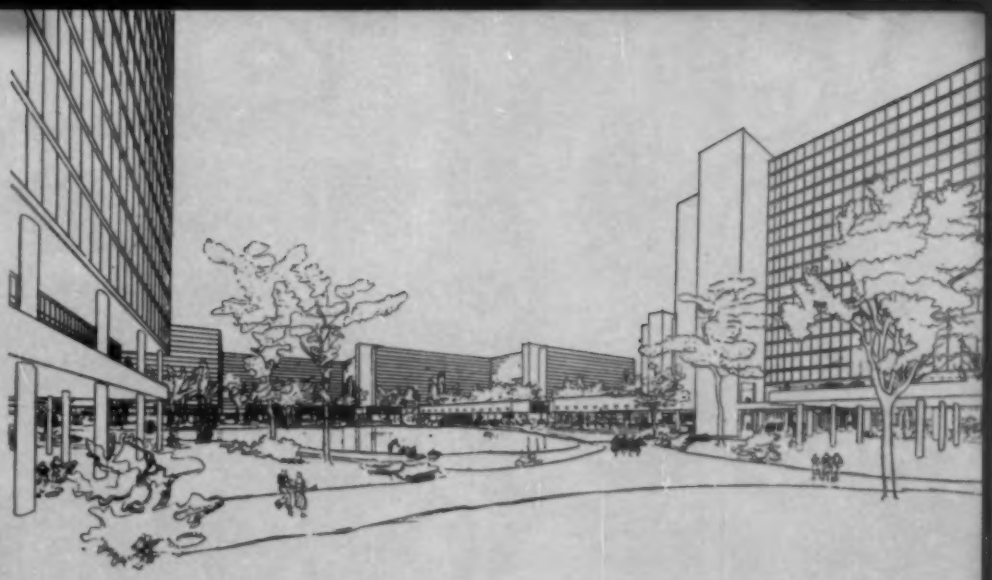
**1857** CENTRAL PARK, NEW YORK (left). *Frederick Law Olmsted planned for Central Park the first fully developed system of separated traffic lanes: grade separations along the "traverse roads", to prevent interference from city traffic.*

**1920** WELWYN GARDEN CITY, ENGLAND (right). *Louis de Soisons designed this second "Garden City" built on the principles of Ebenezer Howard. Widespread use was made of the cul-de-sac, a motif introduced by Sir Raymond Unwin and Barry Parker. Characteristics of the Welwyn Garden cul-de-sacs: length about 200 ft unified planting, frontage.*



# *attitudes toward urban design*

**RICHARD J. NEUTRA:** In the program of reshaping the American urban scene we need to realize that the whole world at this moment is invaded by "Americanism" in terms of the urban scene, and that there is a common ground among the non-Americans (maybe the "un-Americans") who are quite unanimous about our virtues, which are supposed to be an industrial technical know-how, and that we have the dough. There seems to be unanimity from Pakistan to Denmark on this subject. Where do we get with this? There is no doubt that there are more satisfactory cities everywhere in the world than there are in this country. This is a terrible thought, but it is the truth. I am shaken to the heart when I think of the many urbanistic disasters that are now being perpetrated in the name of this industrial civilization all around the globe, and I must add that this civilization is spear-headed by our country. I was impressed by the remarks of President Pusey, in opening this conference, about Alfred North Whitehead, who had predicted that the new era will not be concerned so much with unorganic matters as with the biological approach. Our civilization today is characterized by such speed and velocity that it does not seem to fit in very much with the long-range approach of the biological scheme of things. This is exactly our problem when we come to the urban scene. The urban landscape which we want to improve by our artifacts is in the first place a phenomenon to be understood on a biological basis. This landscape surrounds us and, as I like to point out, permeates us. We know now that the individual is not separable from it. This is not a philosophical thought, but one entirely borne out by current science. There is no separation of the environment and the individual, and the individual cannot truthfully be separated from the group. We are anchored to the landscape by our sensitivities. First of all, we have eyes which can reach to the stars. We are able to visualize very distant areas of space. Certain attempts are made to get along with as little sunshine, as little air as possible (to get bigger revenues). But there is no doubt that human beings need certain visual satisfactions and that they are deprived, if without them. We have a great need of long-distance accommodation for our eyes: people living in small, cramped quarters are hurt by being unable to satisfy this need. Then there is the thermal sense which is also a long-range sense and connects us with the sun: the sense of radiation that is built into our skin. The city planner can do a lot for this. There is the sense of acceleration in our inner ear, whether we are rising—Otis-borne—to the top of the Empire State Building, or Douglas-borne to the stratosphere. I think that the biologist and the physiologist should be chairmen in meetings for reshaping the human environment. Our ears, though they protrude only a little bit into space, have a range that is far. I suppose 20 percent of all auditory nuisance and visual litter of the highway could be eliminated by a good landscape architect. It is possible to plant so as to cut down noise. It is possible even to plant jasmine in such a position that the prices charged by the motel will be justified, as the rates of Iran's Shiraz Hilton Hotel are by the roses of that famous city. It is entirely feasible to engage in olfactory planning. The smell of creosoted telephone poles is something we just get thrown in without anybody thinking about it, and there are many other smells in the urban scene. All these things have something to do with planning human environment. The pollution of the air (which we have so wonderfully licked in Los Angeles), or the shortage of oxygen, are all being recorded in us. Whatever surrounds you may stimulate your visceral senses: this is being done continually by conflicting shapes and colors. There are all sorts of reasons why we should be uneasy about our urban civilization. It is being discovered that many diseases—not only nervous diseases—have to do with environmental planning. This is definitely a very serious situation and it is questionable what the first steps should be—legislation, civil engineering, or the use of beauticians. We are all facing a common danger, a common threat to survival, and if we planners, architects, landscape architects, can rouse the public to awareness of this danger, we may in one or one and a half generations become as honored and powerful as the American Medical Association (which was nothing, 40 or 50 years ago, when I was a boy, and the American doctors came to Vienna to study medicine). Confidence of the public is a reward we would love to earn and need, all of us in this room, called together by Dean José Luis Sert. **ROBERT STURGEON:** Dean Sert brought up the subject of anonymity in architecture; but you have to have the spark of genius to start with. **JOSE LUIS SERT:** I think that today there is an overemphasis on names and personalities, and that the other side—the possibilities and benefits of working as a group—has been underplayed. We will all welcome as many outstanding works of genius, but, above all, we should try to lift the general standard. The most beautiful cities are always those that have greater harmony, greater unity in scale, and a greater continuity of spirit. It is not the isolated monument, but the pleasure of looking at outstanding buildings in a setting that is harmonious and valid.

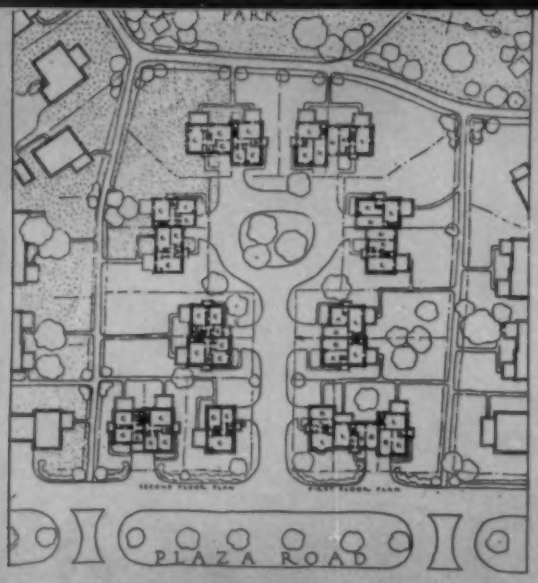


**1923** REPORT TO TOWN PLANNING CONGRESS AT STRASSBOURG. *"We are now in a position to lay the foundations of modern town planning, based on four direct and concise requirements which are capable of meeting effectively the dangers which threaten us: 1. We must decongest our cities in order to provide for the needs of traffic; 2. We must increase the density of centers of cities in order to bring about the close contact demanded by business; 3. We must increase the means whereby the traffic can circulate; 4. We must increase the area of green and open space.*
**1933** VILLE RADIEUSE, ANTWERP PROJECT. *Proposal for the future of the great city, by Le Corbusier* (right).

**LADISLAS SEGOE:** The simile of an orchestra with city planning is an intriguing one. There are always some players in an orchestra who feel that the role of the conductor is rather superfluous, but those of us who listen, feel that the conductor has an important part to play. But before he can conduct, someone must have provided a score, and the problem remains who should be the composer and who should be the conductor? **JOSE LUIS SERT:** It is true that someone has to write the score. There is a program that has to be written, after a very careful analytical study of the conditions of a community. This program has to be written not only by the people who have done the analysis but also with the help of those who are going to do the synthesis. This program—this score—would have to remain flexible, contrary to that for an orchestra, because we operate within a considerable period of time, and with a living organism—the city—where conditions are constantly being modified. But if everything is once assembled in correct proportion in a score, the work—allowing for all modifications—will benefit. There will have to be a conductor also, or rather conductors, who will take different parts of the work as their presence is more useful to its progress. **ROBERT LITTLE:** I'm not sure it is an orchestra. If the score is not yet written and we are not sure who is leading it, it sounds more like a bop session, which would be fun. **WILLIAM MUSCHENHEIM:** Since we are talking about orchestras there must, I suppose, be soloists which in our case might be the sculptors and painters. I think they should have a part to play in any city development. **GARRETT ECKBO:** The urban landscape has no boundaries —it is a continuous thing—but all of us, as architects, are conditioned by our jobs to work within isolated fragments. We will have to learn to work in terms of continuity of design, which doesn't have boundaries. This should lead to a major change in attitdue, an enriching in detail, a breaking down of scale. **JOSE LUIS SERT:** I also have the feeling that a lot of the work being done in architecture and city planning is scale-less. We design things that look very well as models, or blown down to magazine-page size, but very bad when blown up to full size. We can actually have today as much richness as ever before, but we are accepting buildings that do not have the human value and the visual impact they should have if thought about more carefully in terms of the man in the street who looks at them and moves around them.

# *forces that are shaping cities today*

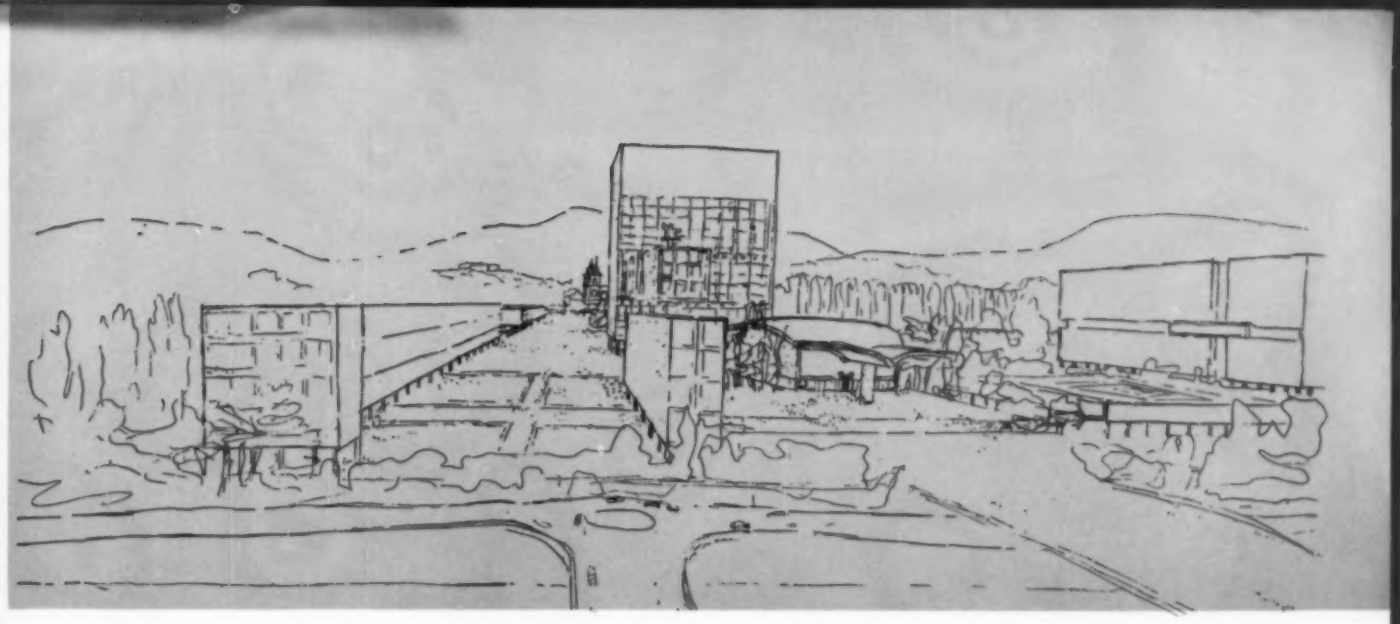
**LLOYD RODWIN:** If we were to evaluate the forces that shape our cities we would have to examine all the functions—economic, social, political, and technological—which affect the three-dimensional urban environment. But we are disturbed rather, in this Conference, by the failures of urban design, by "the frequent absence of beauty and delight in the contemporary city." Let me draw your attention to three facts. The first fact, alas, is a sad one: the architects, planners, and landscape architects rank among the least important of the forces involved. It's true that a lot of bad urban design has been perpetrated by these professions. But, over the long pull, these problems would seem to be their principal professional responsibility. The second fact, unless I have overlooked some important portents: the basic trends appear to favor a renaissance of urban design. With income rising—technical innovations—increased social responsibility —extension of public power—to a much larger extent than is realized, the socio-economic and political log jams have been broken. The third fact: these possibilities could be and generally are frittered away in policies and regulations without imagination, in development without taste. Material progress has reached the masses fairly quickly and has produced useful but vulgar improvements. But, beyond a certain point, the masses will seek better quality and more satisfying urban environments. However, even though the consumer can generally get most of the things he wants, what he wants is not too clear. The consumer's quest for privacy, for open spaces, for good schools and a more adequate environment has given him suburbia, a poor and a unworthy monument for contemporary urban design, as are most of our shopping and industrial areas. Producers, too, who sometimes know better, have shrugged away most of their responsibilities by referring to the compulsive tyranny of the "market." Who are, or who should be the tastemakers in urban design? I would have thought they should be found in the urban design professions, but what evidence is there that these professions really do have much to contribute today to urban design? What are they doing now to justify the role they would like to have? I wonder if urban design is being held back by the thinness of its intellectual or artistic capital?




**1928** RADBURN, NEW JERSEY (left). *To meet the needs of living with the automobile, Henry Wright and Clarence Stein evolved this plan. Its main features are: the superblock; specialized roads planned and built for one use instead of for all uses; complete separation of pedestrian and automobile traffic; park as heart of neighborhood.*

**1945** ST. DIÉ, FRANCE (acrosspage). *"The new plan by Le Corbusier for this war-devastated city contained eight tall apartment blocks, each fully equipped with communal services in the manner of the Unité d'Habitation at Marseilles, and a new civic center freed from all vehicular traffic. This pedestrian center was the first physical expression of the emerging idea of the 'core.' The social function of the new community centers or cores is primarily that of uniting the people and facilitating direct contacts and exchange of ideas that will stimulate free discussion. People meet to-day in our cities in the most unfavorable conditions. . . . These planned community meeting places could establish a frame within which a new civic life and a healthy civic spirit could develop. . . . We are not talking of things that are entirely new, for such centers once existed in our cities and what came out of them has shaped our civilization. Free thinking is not a product of press, radio or television . . . it was born in the meeting places of the people."*
JOSÉ LUIS SERT

The universities and the design professions are partly responsible. At present, urban design rarely comes within the line of vision of the typical university student; and few graduates of the planning and architectural schools ever encounter these problems, let alone wrestle with them. We live in an unusual period: what we want can be made to happen. If the design profession could kindle among its practitioners the same passion and insight for gracious and large-scale urban design they now have for contemporary architecture or the planning process—and if this ferment could be geared to modify the public taste—the effect might become the most stirring force in transforming our cities into centers of fancy and delight. There is no need to look for a scapegoat. The solution lies in our own backyard. **CHARLES ABRAMS:** The history of civilization from Memphis, Egypt, to Memphis, Tennessee, is recorded in the rise and fall of the cities. Our city boundaries were laid out for horses and it was the limits a horse could draw a fire truck that set its bounds. The automobile can now pass through the city in a tenth of the time, but the borders still hold to the old equine limits. Out of the metropolis now stretch the Great Necks, Little Necks, Throggs Necks, and Teanecks, pouring new caravans of indentured Plymouths filled with white workers from urbia, suburbia, exurbia, and super-urbia. Into the centers of cities they had deserted pour the darker workers, filling the abandoned houses with stream upon stream of the new darker migrants. With almost no new housing built for them, the overcrowding by non-whites is six times as great as of whites. And against this irrepressible momentum and amid what should be land plenty for an industrial world, the cities are finding themselves at last landlocked, land poor, and land hungry. The flat or gently undulating land at their outskirts, once available to them by accession, is needed for airports, golf courses, cemeteries and parks, one-story factories, greenbelts, suburbs, and political status quo. The new suburbs, with their thousands of little links circumscribing the teeming, heaving cities, now proclaim the no-trespass sign. Secure in their new autonomy, they ban the new migrant as an outlander, though insisting upon free access into the city for themselves and their horseless caravans. Even within the city are landlocked areas protected against unwelcome intrusions emphasizing the scarcity of land for those who most need it. Armed with the new powers of the political revolution, the city valiantly tries tearing down slums and challenging the heights once reserved for church-spires and prayer. Urban development, redevelopment, renewal, rehabilitation are now all within its great power-compass, and the darker newcomers are shunted about under its mighty exercises. But no solution seems in sight, for overcrowding invites more overcrowding as the influx continues and as no additional dwellings are supplied. The four-room slum becomes the three-room slum, the three-room slum, the two-room efficiency, the two-room efficiency, the one-room dormitory. Simultaneously, the one-story slum becomes the ten-family furnished-room house, which in turn soon gives way to the 400-family housing project. Tossed into this world of grim reality, comes the architectural graduate with six years of irrelevant information on cities and the city planner with two, both with little knowledge of finance or the ramified exercises of government power. Among the consequences of the four revolutions I have mentioned are obsolete codes, absolute financing restrictions, and resolute zoning laws which are the real arbiters of the city's destiny. Legislative architecture, financial tyrannies, and social and political taboos design our houses, locate our industries, and harden our traffic arteries. If anyone challenge this, I ask him how much ingenuity the architect has under the FHA manual. Can Frank Lloyd Wright build a public housing project on land costing $5 a square foot at $2,500 per room cost that will not look like a housing project? With the economics of the elevator dictating nothing else but a six- or a thirteen-story project and the legislative limitation on per-room cost (which means using only a certain-size brick and a certain-size room) will Wright's project in New York look different from Neutra's and Neutra's look different from Sert's? Assuming that an urban redevelopment subsidy writes down land cost from $10 a square foot to zero, will the passion of the redeveloper for maximum profit with minimum outlay persuade him to build on only 20 percent of the lot for the sake of the future? Was Stuyvesant Town the architect's fault or the natural result of Metropolitan Life's calculation that, since New York City gave tax exemption on the building, the greater the building coverage, the more the tax exemption? Is the private developer expected to build monuments to civilization or to maximum milkability? Will the entrepreneur, tooled for profit retool for prestige? And if government puts the building departments of America in the hands of Lewis Mumford, will the private developers build? If the answer is "yes," what, I ask, happened to rental housing when the government put thumbs down on the bail-out? We are living in a society of pressures—pressure cookers, pressure salesmanship, pressure politics, financial pressure, mortgage pressures, racial pres-



sures, social and population pressures, and high blood pressures. In two trips around the world, I have found that the more developed a country is, the worse its housing problem; the more primitive, the less its housing problem. In the bush area of the Gold Coast, I saw a reasonably well-planned village, with as little coverage of the land as the women had on their bodies. They lived in one-story buildings (the roofs were hard and flat), forming a street leading directly from the road. There was ample yard space and cool shelter. The tribal system was nearer to a co-operative than any in America, land was free, and building materials were nearby. A house built by our Neolithic ancestors after they had discovered the flint ax, with pitched roof and fireplace, on 900 square feet, would bring $1,500 a season, today, in Miami. This doesn't mean that I want to go back to tribal existence! I do mean that part of the price of civilization in our cities circa 1950 is poor housing, bad architecture, and horrible planning; that slums are inevitable in face of mass migrations; that Sir Raymond Unwin's statement that nothing is gained by overcrowding doesn't apply to a private enterprise society. There is a lot gained by overcrowding, many lots. A profit system exacts its price for the other values it produces. In the absence of atomic clearance as a substitute for the more sluggish slum clearance, we can still rebuild parts of our cities a little better here and there —at a price. The political revolution has released all the constitutional powers we need to do anything the designer wants to achieve. Macy's can condemn Gimbels as a part of urban redevelopment, if only Moses consents. All that is needed are the funds and the simple legislation and that's a function of political pressures. The problem today is mainly one of know-how in the art of political pressures—to get the thing done. **GYORGY KEPES:** Our knowledge about legal, political, or technical issues in the action pattern are basically defined for us by the value scale that we develop for ourselves. And this value scale, on the other hand, is certainly defined by the images that we create about ourselves and about our relation to the world around us. If we cannot find a real understanding, a real image of our role in the universe, I think all these wonderful tools and this wonderful equipment cannot come to full use. We are all speaking today about being out-of-scale with the world around us—things are moving faster than we can grasp, things are becoming bigger and more complex, and we can't understand and organize them. Somehow the old structure principle, the old images, the old way of seeing are not adequate to handle these large dimensions. How can we get away from our inherited and evidently limited values? What we call the esthetic experience—the experience of the sensibilities, the ability to perceive the total in an ordered form—must be channelized to the broad scale of experience that we are here talking about. One of the ways of doing this, it seems to me, is to read the frustration and the expressive kind of protest against the frustrated, distorted world, in the work of the last perhaps 100 years of art. It was not by accident that in the beginning of the last century, as the first slums with their smoke and dirt blotted out the sunshine and the richness of color, Constable and Turner created a world full of color and movement as something that tried to regain the lost paradise. It was not by accident that the last phase of our visual arts has been the almost frantic search to find a new meaning to structure, a new order aspect. It was also not by accident that in recent years in this country there has been a movement which makes hero-worship of the kinesthetic pleasure —a joy in playing with the pigment, just trying to feel the movement of the hand. It is a clear record that in our mechanized world we need a new type of sensibility, a new type of response. One of the more important aspects of creating a better urban environment is to open the eyes of the man who is involved in design to these values which have been gradually and in a very stuttering way developed in the work of the painters, the sculptors, and those other people who have been perhaps more frustrated, perhaps more sensitive in responding to the difficulties of the surroundings. **HIDEO SASAKI:** I should like to dwell on one significant force instrumental in shaping the city, which I think needs mentioning; and this force is that of the *designers*. I maintain that since the visual aspect of a city is only that which is created, it is obvious that to a large degree the individuals mentioned are most responsible for the ultimate expression of the urban environment. While it is true that in many instances the restrictions imposed by the client upon design are such that nothing other than mediocre design is possible, I believe that there are opportunities enough where good design may be executed so that significant contribution may be made to improve our urban environment today. Since I have taken the prerogative of speaking of design as good or bad, perhaps I should give some reasons for such judgments. The chief faults in design may be: 1. *Eclecticism without meaning.* Often under the guise of architectural harmony, stylistic conformity of present periods as well as the past is willingly, or sometimes unwillingly, practiced. 2. *Monumentality without meaning; or lack of scale.* The

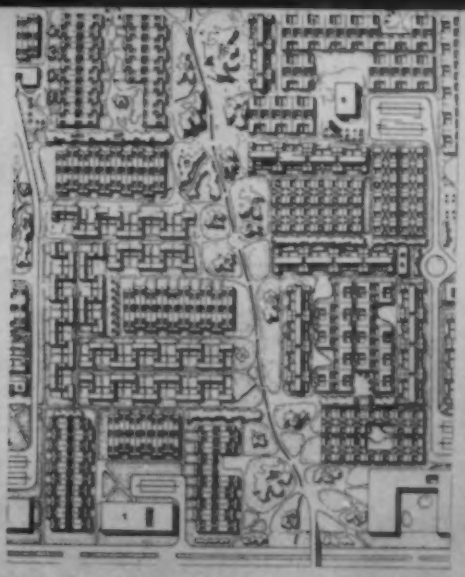
**1948** HARLOW, (left) *is one of the "new towns" built in England under the New Towns Act, 1946. Its main features are the great care taken to preserve the natural landscape and the comparatively wide separation of the various parts of the town from one another by park areas. The town is organized in "neighborhood clusters" built up of housing groups. "This comparatively small unit (150-400 dwellings)," writes Frederick Gibberd, Harlow's planner, "makes possible more intimate and friendly social groupings than are provided in a neighborhood based on school sizes." A series of community groupings are therefore articulated: the housing group with its play space; the neighborhood with its primary school, shops, community hall and "pub"; the neighborhood cluster with its shopping center of about 60 shops and general community facilities; and the major town center.*

so-called modern buildings clad in steel and glass too often lack any sense of being related to human beings. While it is true that in our times we have developed a technological scale, which may express a dimension never witnessed before, it is still true, none the less, that it is the human animal who must live in and understand this creation. 3. *Lack of relationship with surroundings; or emphasis on the spectacular.* If we take an attitude of awareness of the situation in which a creation is to be placed, we may choose to be humble on the one hand, or on the other we may choose to be quite bold and daring. But the notion that each and every building must be different than anything ever done before is, to me, an abhorrent design notion.

**LADISLAS SEGOE:** Our national pattern of urbanization is very largely a product of transportation. It has been as much responsible as any other factor in furthering the concentration of greater and greater proportions of our population into a small number of larger and larger cities and metropolitan regions. While new forms of transport and successive advancements in transport technology created increased possibilities for diffusion, the policies and practices pursued by private enterprise in the providing of facilities and the fixing of charges had the greater weight and operated toward further concentration. Some governmental efforts toward control have been exercised through various Federal and State agencies; but these have accomplished little to redirect the concentrating influences. Long-distance transportation instrumentalities affect the city largely through terminal facilities—docks, wharves, railroad stations, and yards, etc. The major community problem here is to bring such facilities into harmony with the long-range plans for the desirable development of the community, to guard against conflicts and poor locations, and to correct the present multiplicity and even superfluity of terminals within urban areas. Transportation and traffic considerations *within* the city or urban region played hardly any part in the layout of the original street systems of our cities. The initial relief from residential congestion near the heart of the city, made possible by mass transportation facilities, was soon counter-balanced by the congestion of traffic itself. Maladjustments due to past traffic policies include over-concentration of population and extremely high real estate values in some areas; undue dispersion, vacant land and falling property values in others; and excessive costs of public service resulting from the difficulties in transacting business. In recent decades the general ownership of the automobile and wide-spread use of the truck have produced drastic changes in the growth-pattern of cities. The earlier compact and even congested cities "exploded" over the countryside. However, what little relief was brought to intensively developed centers through such decentralization was soon overshadowed by traffic and parking congestion induced by the same motor vehicles. A new national policy with respect to transportation facilities, implemented by appropriate Federal and State regulatory agencies, with specific proposals subject to review by local planning agencies, is needed if we are to find solutions to these problems of urban design raised by transportation. Dynamic elements in our technology and our social structure still afford many opportunities to utilize transportation as an instrument in a desirable pattern of urbanization. It is my contention that most of the legal and administrative tools for doing this job exist or can be obtained, but that they are not utilized effectively, even where they are available.

**JANE JACOBS** (Associate Editor, *Architectural Forum*): Planners and architects are apt to think, in an orderly way, of stores as a straightforward matter of supplies and services—commercial space. But stores in city neighborhoods are much more complicated creatures which have evolved a much more complicated function. They are a big portion of the glue that makes an urban neighborhood a community instead of a dormitory. A store is also a storekeeper. One supermarket can replace 30 neighborhood delicatessens, fruit stands, groceries, and butchers, as a Housing Authority planner explains. But it cannot replace 30 storekeepers, or even one. The stores themselves are social centers—especially the bars, candy stores, and diners. A store is also often an empty store *front*. Into these fronts go all manner of churches, clubs, and mutual uplift societies. These storefront activities are enormously valuable. They are the institutions that people create, themselves. If you are a nobody, and you don't know anybody who isn't a nobody, the only way you can make yourself heard in a large city is through certain well defined channels. These channels all begin in holes-in-the-wall. They start in Mike's barbershop or the hole-in-the-wall office of a man called "Judge," and they go on to the Thomas Jefferson Democratic Club where Councilman Favini holds court, and now you are started on up. It all takes an incredible number of confabs. The physical provisions for this kind of process cannot conceivably be formalized. When the holes-in-the-wall disappear, several different things can happen. If you look at Stuyvesant Town in New York, you can clearly see one result. That development is now surrounded by an unplanned, chaotic, prosperous belt of stores,

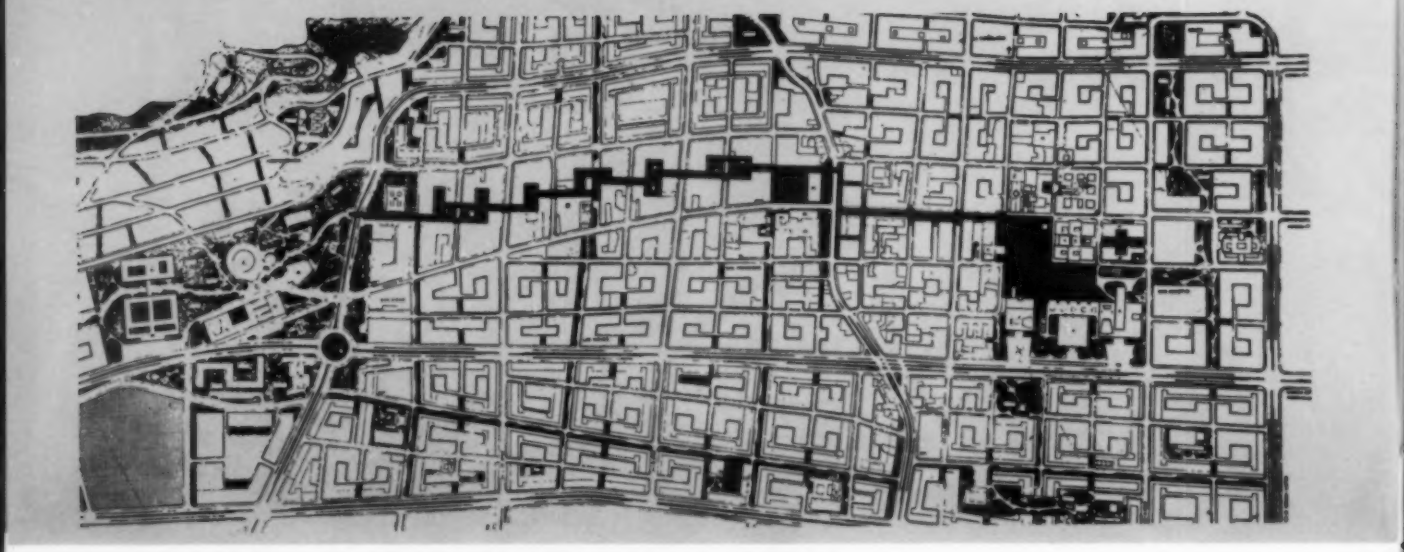
**1948** CHIMBOTE, PERU (right). *A practically rainless region of the Peruvian Coast was chosen as the site for a new town, based on the hydro-electric development of the Santa Valley. It was planned by Sert and Wiener for an eventual population of 40,000 in ten residential units. The plan showed a small stream conducted through the city and branching out in different directions for irrigation, following the traditions of the Incas. All the one- and two-story row houses have private patios and share the use of a community plaza. Yet the density rises to more than 100 persons per acre, resulting in great economy in public services.*



the camp followers around the Stuyvesant barracks. A good planner could handle that belt. But beyond this, is an even more chaotic area, is another belt. Tucked in here are the hand-to-mouth co-operative nursery schools, the ballet classes, the do-it-yourself workshops, the little exotic stores which are among the great charms of a city. This same process happens whether the population is middle income, like Stuyvesant Town, or low income, like East Harlem. Do you see what this means? Some very important sides of city life, much of the charm, the creative social activity and the vitality shift over to the old vestigial areas because there is literally no place for them in the new scheme of things. This is a ludicrous situation, and it ought to give planners the shivers. There are degrees to which all this can be better or worse. Putting in shopping centers, defining neighborhood units in proper geographic and population scale, mixing income groups and types of housing, and being very sensitive about just where the bulldozers go, are all basic. There is already thinking, if not much action, about these matters. I would like to add four suggestions. First, go back and look at some lively old parts of the city. Notice the tenement with the stoop and sidewalk and how that stoop and sidewalk belong to the people there. A living room is not a substitute; this is a different facility. Second, I think planners must become much more socially astute about the zoning of stores and the spotting of stores. Fortunately, in retail business, economic and social astuteness can make fine allies if given a chance. Third, architects must make the most out of such fortuitous social facilities as laundries, mailbox conglomerations, and the adult hangouts at playgrounds. Much can be done to play up instead of play down the gregarious side of these seemingly trivial conveniences. Fourth, we need far more care with outdoor space. It is not enough that it lets in light and air. It is not enough that unallocated space serve as a sort of easel against which to display the fine art of the buildings. In most urban development plans, the unbuilt space is a giant bore. The Gratiot plan for Detroit by Stonorov, Gruen, and Yamasaki (which is not to be built), the Southwest Washington plan by I. M. Pei, and some of the Philadelphia work, such as Louis Kahn's Mill Creek, are unusual exceptions. The outdoor space should be *at least* as vital as the slum sidewalk. We are greatly misled, I think by talk about bringing the suburb into the city. The city has its own peculiar virtues and we will do it no service by trying to beat it into some inadequate imitation of the non-city. The starting point must be study of whatever is workable, whatever has charm, and above all, whatever has vitality, in *city* life, and these are the first qualities that must be given new firmness, commodity and delight in the rebuilt city. **LEWIS MUMFORD:** If this conference does nothing else it can at least go home and report on the absolute folly of creating a physical structure at the price of destroying the intimate social structure of a community's life. It would then think better of the sort of projects I see so often on the drawing boards of the schools, and begin with the intimate body of the community as something that has to be preserved at all costs; and then find its equivalent modern form in a sufficiently economical fashion to be available to the shopkeepers and others.

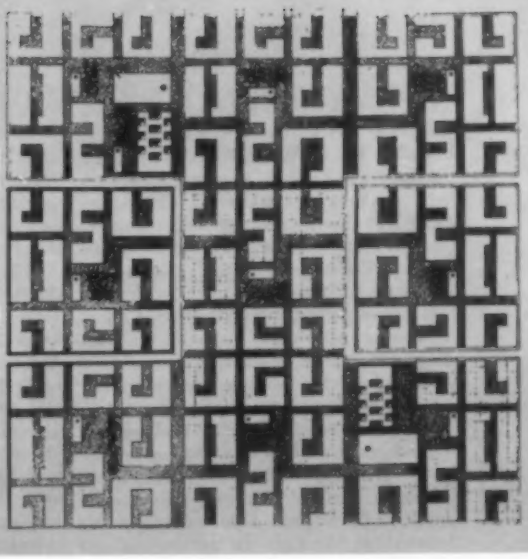
# *problems of implementation*

**FREDERICK ADAMS** (City and Regional Planning, MIT): It is natural in considering the problems of implementation of urban design that we look first at what can be done through legislation. During the past half century we have added to the ordinary controls over building construction and sanitation such legislative devices as zoning, master planning, subdivision control, and urban redevelopment or renewal. *Zoning* developed in response to a desire to avoid the evils of congestion and the mixing of uncongenial land and building uses. It is admittedly restrictive in form, but there is no inherent reason why zoning regulations should discourage imaginative urban design; adjustments are constantly being made to meet the requirements for new building types or construction techniques. On the positive side, zoning provides a degree of stability and order to residential and commercial areas. Esthetic factors do now play an important part—at least indirectly—in zoning. The uncongeniality of many land and building uses being a factor of their design rather than their particular type, the stringency of zoning regulations could be drastically reduced if a greater measure of control could be exercised over the architectural design of buildings. It is almost impossible to write standards of good design into a piece of legislation; yet if officials are to be given broad discretion over such matters it is necessary that some specific



standards of guidance be provided to those administering the regulations. Two developments in the field of zoning have come about in response to this desire. One is the establishment of historic zones in some of our older cities, in which approval is required by a board of architectural control before a building can be erected. Another type of esthetic control has recently found favor in a number of suburban communities, the objective of which is to prevent excessive uniformity *or* dissimilarity of architectural design. Here the issues at stake are much more controversial and the methods of accomplishment more subject to criticism on the basis of the degree of esthetic discretion which should be granted to an administrative board. A few weeks ago, the capital of one of our mid-western States adopted an ordinance of this type, forbidding a building permit to any single-family residence "if the exterior architectural appeal and functional plan of the proposed structure will, when erected, be so at variance with or so similar to" others in the neighborhood as to "cause a substantial depreciation in the property values of said neighborhood." Plans and elevations must be posted; objections can be filed by property, owners within a radius of one mile from the proposed structure; and the power of action rests with a City Building Board consisting of the City Engineer, the Planning Director, and the Park Superintendent. Obviously such methods have been developed in response to local demands for control over large-scale operations by speculative builders and, so far, have not been ruled unconstitutional by the courts. For significant improvement in the quality of urban design, a more positive approach is needed, which I think can come only from a better understanding of individual and collective responsibilities on the part of all those in a position to influence future patterns of urban growth. *Master plan* legislation requires a community to subject private and public improvements to scrutiny in relation to a long-range, comprehensive program for future development. As a master plan provides a basis for zoning regulations, it is an important element in determining the framework within which the urban designer works. "Its primary justification," Prof. Charles M. Haar wrote recently in an article in the *Harvard Law Review*, "is an assumption that the interdependence of land uses in an industrialized society makes necessary municipal controls over private property." Effective administration of a master plan, with an intelligent use of subdivision control powers, should enable a planning agency to guide private and public development along lines which would provide maximum flexibility in urban design. Perhaps an even greater opportunity for such application is provided by *urban renewal and redevelopment* legislation. Here it is possible to control the actual form of the completed project and surrounding neighborhood, rather than to depend solely on a set of ground rules aimed primarily at discouraging buildings or uses considered to be detrimental. It is obvious that, whatever strides are made in planning legislation and administrative practice, the net effect will be insignificant unless private developers and the public at large co-operate in attaining higher standards of urban design. Much can be done by practitioners in architecture, landscape architecture and city planning to show their clients that good urban design costs no more—and frequently less—than bad or mediocre design. But until the average citizen recognizes it as a factor of considerable importance in his way of life, and is willing to express himself forcibly on the subject at the political level, there is little hope of reversing the present trend toward rampant individualism and commercialism. The raising of standards of public taste, then, should be the keynote of any campaign to improve the quality of urban design, and in such a campaign the design professions have an important part to play. They must also, however, concentrate more on improving their own proficiency in the design of large groups of buildings and the spaces around them, in order that they will be adequately prepared to meet the public demand for higher standards when it comes. Whatever lies ahead, it seems to me that technological advancement in the field of transportation calls for some rethinking of our concept of urban scale. The rapidly changing vistas of the city and the suburb, observed from the seat of an automobile or bus, are at least as important as are the street scenes observed by the pedestrian, in his ramble from his parking space to his office or shop. The downtown shopping district, adequate for the gaslight and Keystone Cop era, still attempts to perform a multi-purpose function far beyond its capability, as it attempts to meet the spiraling demands of through traffic, local traffic, parking, deliveries, and mass transit—not to mention the lowly pedestrian. Some form of segregation, of the constitutional variety, would seem to be the answer—but it should be based on ideas developed by urban designers, rather than on the efficiency standards of the "systems engineer" or the police department. I believe we have the legislation necessary to put such ideas into effect; but, failing their exposition in terms understandable to the layman, we cannot blame the city fathers for their lack of imagination.

**1953** BOGOTA, COLOMBIA. *This plan designed by Le Corbusier and Sert and Wiener was perhaps the first for a large city to include detailed layouts for the changes proposed within each residential area. The city was first divided into 34 community units of 35,000 to 65,000 persons, each large enough to support a complement of urban services, and it was around these that the road structure was determined. These community units were then designed in detail, the principle employed being to establish acceptable standards of measurement for different categories of dwelling types schools, markets, small urban centers, and open spaces, as well as a carefully differentiated system of roads. Small civic nuclei (cores) were strategically located with public plaza, theater, library, health center, shopping area, market place, and open general-purpose auditorium. Schools were located in park strips running through all residential districts. The roadways were categorized as V1, V2, an V3—limited-access throughways dividing the community units; V4—commercial streets dividing the units; V5—distributor streets connecting each neighborhood; V6—service streets within the neighborhoods; V7—footpaths. Short footpaths to dwellings were widely used to reduce public street area and increase public open space. It was found that the use of these consistent measuring elements made possible a great variety of layout treatment—formal, informal, compact, and loosely planned—according to the local conditions in each area, while never departing from the accepted planning criteria.*



# *is urban design possible today?*

**FRANCIS VIOLICH** (University of California): Urban design, to my way of thinking, is the coordination of elements of the city in a three-dimensional sense. For this we have to know the power structure behind the elements we are trying to co-ordinate. We offer San Francisco as a case study. Along with the downtown Freeway proposal there suddenly came $2,000,000 to make the Ferry Building into a historic monument and to provide a park in front of it to make a proper setting for the building. Knowing that this was going to happen, a group of influential citizens in the community formed a committee for a Ferry Building Park, went to the AIA and to the California Association of Landscape Architects and asked to have an action committee set up to study the possibility of a park. This was formed, headed by Vernon DeMars and Theodore Osmundson, and its solution showed that if the Freeway were curved at this point, an oval shaped park could be created. At this point the Department of Public Works became greatly upset because the freeway plans were all finished. These indicated a two-story, eight-lane, 60-ft high, straight concrete structure which would be placed about 70 ft out from the face of the Ferry Building. At this point, the citizens began to get worried and the newspaper began to take a stand. Eventually, after all the fighting was over, it appeared that the Board of Supervisors approved unanimously the straight freeway and also asked for the waterfront State Park, even though the State people had said there won't be any park if the Freeway is straight! As a result, the whole business has been sent up to the State Capitol. Here are some points of view which we have deduced from this experience: first, the galaxy of conflicting and overlapping authorities—in our case 30; second, the dominance of engineering mentality; third, politics—that is, the elected officials making decisions based on the strongest pressure interests rather than on technical or professional judgments; fourth, the "frontier mentality"; fifth (which underlies all of these) is the basic lack of cultural framework for urban design; sixth, the lack of traditional professional involvement in urban design (this is criticising the AIA and AIP for not having come forward, to take a strong stand on this issue as professional groups); last, and most important, the lack of mechanics for co-ordinating three-dimensional planning at the urban design level. On the favorable side, we have in California lots of money. Able and professional personnel is available—unfortunately not used. City planning as a process is now well established in city government. Public interest and concern were expressed in the large number of letters and large attendance at meetings. I believe that we can have urban design in the U.S.A. in spite of these problems, but we must be realistic in order to overcome them. We must set up machinery to take full advantage of our potentials, machinery within local government to achieve three-dimensional design. We need to develop the urban design function as a part of the general city-planning process. We need to bring up the whole phase of three-dimensional design to the same level we have developed in our general planning. **FREDERICK ADAMS:** I think Francis Violich gave us an excellent case study, but I do feel that it was primarily a question of timing. If an engineering department has been left in ignorance to go ahead with detailed working drawings and developed a certain enthusiasm or affection for what it is doing, I think it is too late to deprive the engineers, at the end, by a sudden change. I think that the planning agency, even if it hasn't official authority, should make it its task to find out what things of importance are cooking, and see to it that any conflicts of this sort are aired as soon as possible.

*Curved freeway* (far left) *would have provided plaza and park in front of San Francisco's pre-earthquake Ferry Building and a setting for this historic landmark. Instead, plans for a straight freeway, running directly in front of the Ferry Building, have been approved.*

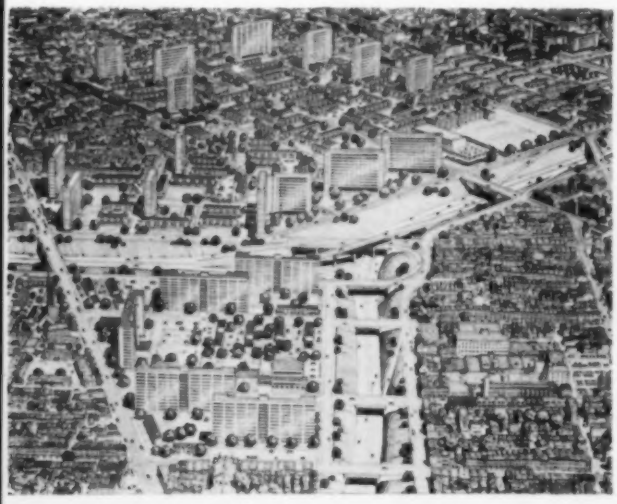
# *urban designs of today*

**DAVID L. LAWRENCE** (Mayor of Pittsburgh): Perhaps the city is technically obsolete. In our grand design for Pittsburgh we don't think so. We think that civilization cannot be a string of country villas, or a sprawl across the landscape of incomplete satellites revolving around nothing. We think there must be a center where the highest skills may congregate and exchange ideas and services; where the rare and the beautiful may be exalted; where the art of administration may be practiced; where the human need for mingling with one's fellows can be met. Downtown Pittsburgh has been tremendously changed in this last decade. It has been ripped apart, opened up, demolished, and rebuilt on more than a quarter of its area. At the Point, where the rivers join to form the Ohio, an area of 36 acres, once solidly built upon, has been cleared for the Point State Park *(below)*. Two existing bridges will be torn down; two new ones built. The Park must be crossed by a vital highway interchange, and a major design effort has been made to prevent the highway from destroying Park values. It will outline the boundaries of Fort Duquesne, reconstruct the Monongahela bastion of Fort Pitt, house an historic museum, and be planted with the flora that existed in the river bottoms of Western Pennsylvania 200 years ago. Having recaptured something of the past in Point Park, we move toward the future in adjoining Gateway Center—a 23-acre non-Federal redevelopment project. The Equitable Life Assurance Society, the redeveloper, has built itself three buildings there, and the Commonwealth of Pennsylvania and the Bell Telephone Company of Pennsylvania are now constructing office buildings on land purchased from Equitable. Parklike appearance is contractually assured, as are adequate off-street parking and harmonious building uses. Gateway Center and Point Park will actually give us something unique in urban life—a greenbelt border for a central business district. In the very heart of the Pittsburgh business district, where the working population is most dense and the land use most intensive, we have also been able to create our first openness through the construction of Mellon Square Park. Its utilitarian use is the underground parking of more than 800 cars. It forms a plaza for the new Mellon Bank-U. S. Steel Building and Alcoa Building, and for old neighbors—the Oliver Building and the William Penn Hotel. To make Mellon Square possible, the foundation of the Mellon family gave the City a gift of more than $4 millions. A whole city block was bought and cleared. Our Urban Redevelopment Authority has just made its first sales agreements for properties in the Lower Hill district. The total cost of this project, which will clear and redevelop 95 acres of blighted area that form the base of our Triangle may well exceed $100 millions in public and private funds. It is a project which involves massive slum clearance. The site plan provides for a diversity of uses—a new street pattern, a consolidation of parcels into large areas susceptible of commercial and apartment development with relatively low land coverage, parking, the center-piece of the project—the Public Auditorium—and other recreational and cultural uses. A city must have some place for its people to assemble. Television, with all its wonders and its errors, is not a complete substitute for flesh and blood. To keep the city in human scale, this central meeting place is part of our urban design. In my judgment, the redevelopment of the Lower Hill—a giant bite from the core of the city—will be the greatest of our Pittsburgh projects. These plans are not of a future vague and undefined. They are being carried out; each month and year sees them advance. It is our hope that the talent of the architect, the landscape architect and the city planner will never fail us. They will not be in-

*Pittsburgh, Pennsylvania: Golden Triangle Redevelopment*

*Detroit, Michigan: Civic Center*

fallible and without human error, but as one city administrator, I hope to work always to give them a chance to do the best that is in them. **FRITZ GUTHEIM:** . . . is there a general plan that attempts to sort out these many different projects and relate them to each other? **DAVID L. LAWRENCE:** Yes, we have a Master Plan of Pittsburgh. . . . **WALTER BOGNER:** What is the situation in Pittsburgh when, no doubt, a great amount of additional land is taken out of income production for taxes and put into parks, to improve the community? **DAVID L. LAWRENCE:** The increase in value of the area surrounding the park, the apartments, garages, and other institutions will more than make up for lost taxes in that area. **SAMUEL HOLSEY:** What controls, if any, are you imposing in your region to prevent the deterioration of fringe areas in the development as marginal and sub-marginal tenants move from one area to another? **DAVID L. LAWRENCE:** A great many of the people that moved from the downtown area to the north or the southside built new buildings, and really removed blight in the areas they went into. **ARTHUR McVOY** (Director, Baltimore Planning Commission): Do you think that it would have been possible to develop this program without wealth in the hands of a few men? **DAVID L. LAWRENCE:** I think there are men like that in every city. What has helped Pittsburgh is a rise of civic patriotism which is needed in every municipality in the country. **CHARLES BLESSING** (Director, City Plan Commission, Detroit): In Detroit, we have been working for the last two years toward an over-all renewal concept for a large contiguous area, including and surrounding the central business district and extending from the Detroit River to the Ford Expressway, approximately three miles from the river. Our riverfront civic center *(across page)* is nearing completion. **CHARLES ELIOT:** One word has been used, which I'd like to stress. That word is "continuity." It was said once, and forgotten, apparently. I think there is a great deal to be accomplished by building on what has already been done, that will continue the good work that has been started in the past. I understand that the planning commission has officially approved the scheme for southwest Washington. This is unfortunate, it seems to me, because of two things. First, it proposes a tremendous concentration of business offices in a place that is not served and cannot be served by mass transportation. And second, that it violates the primary rule of the co-operation of the various professions, in that it has a forced relationship with the topography to the main composition of Washington. **DEAN McCLURE** (Webb & Knapp): The plan does not suggest a large business area which cannot be served by any system—what we are suggesting is a rather small group of Government buildings to house 5000 persons, and parking will be provided on the basis of accepted Government standards. The location of the mall with the hump is set by conditions which cannot apparently be changed today. **REGINALD R. ISAACS** (Chairman, Depts. City Planning & Landscape Arch, G.S.D.): City-forming factors that are of concern to our three professions include economic and social pressures, traditions and philosophies, legal and legislative instrumentalities, educational and professional efficiencies. I regret a tendency on the part of many designers to overlook these forces which are frequently expressed in the form of rather dull economic and social statistics, which tend to be overlooked as being uninteresting. I have been stunned by the aspersions sometimes cast on Chicago. Of course Chicago takes decisive action with a bull-dozer where necessary, but it does so following the advice of its social and political scientists and its economists. Nowhere in the descriptions we have had of other cities' activities has a reference been made to the non-designing professions, or to the use of their findings, nor do I remember any being made to overall planning. Perhaps their social scientists failed to put their data in sufficiently titillating terms, so the designers weren't interested.



*Rendering: E. S. Black; Photo: Blakeslee-Lane*

*Baltimore, Maryland: Typical Urban Renewal Area*

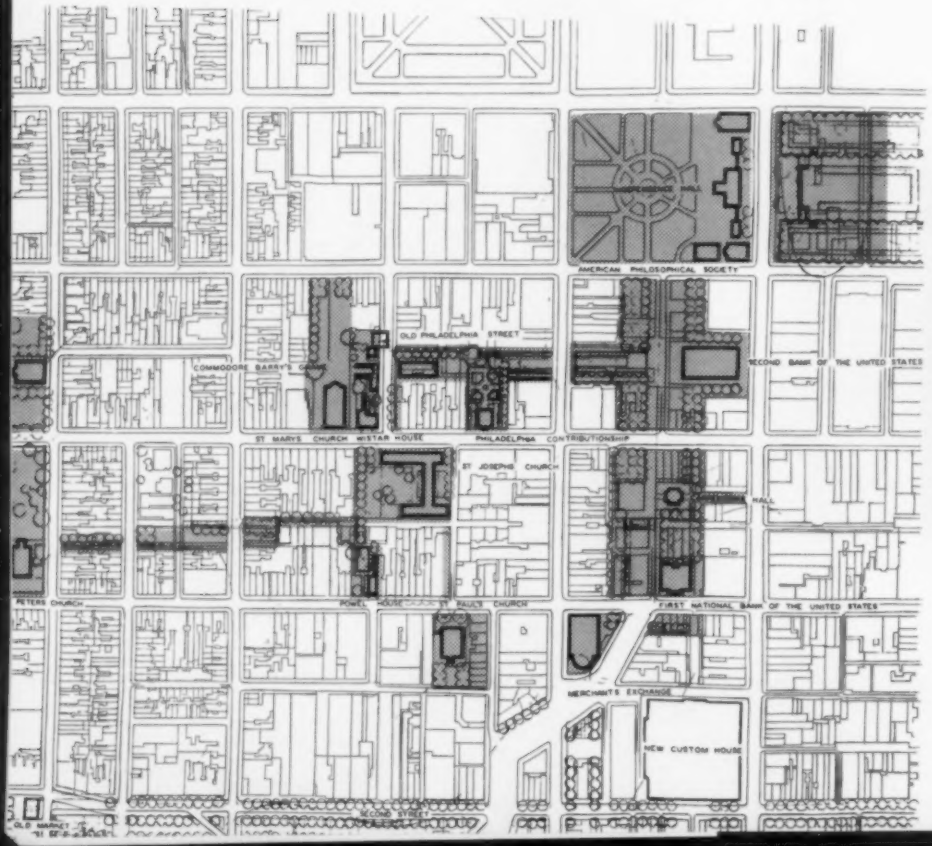
*Washington, D. C.: Redevelopment of Southwest Area*

*Rendering: Schwartz*

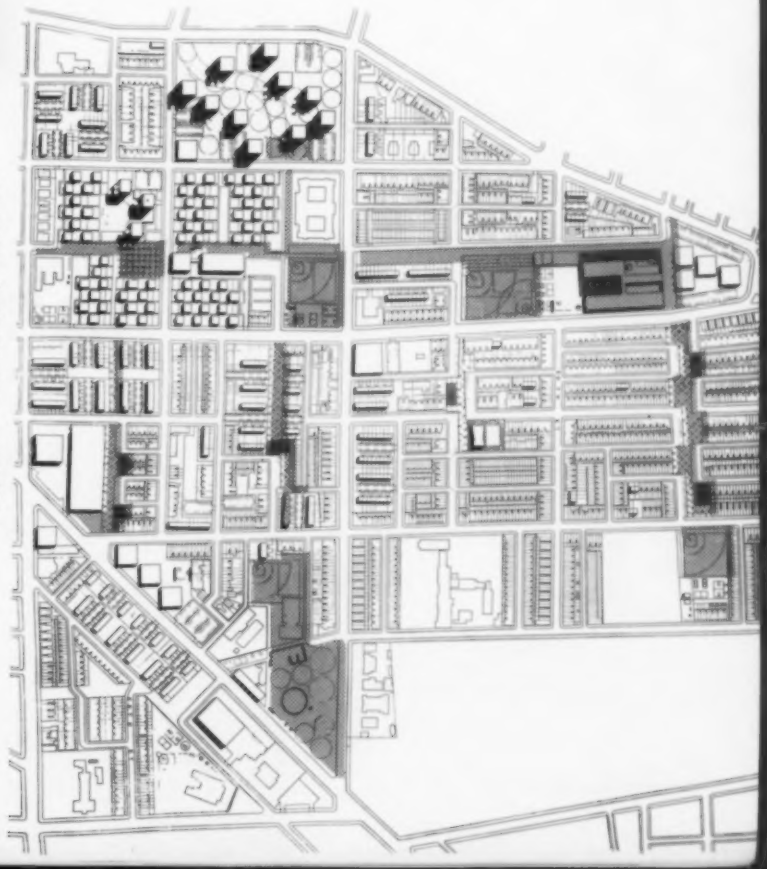
# *urban designs of today: Philadelphia*

**EDMUND N. BACON** (Executive Director, Philadelphia City Planning Commission): The action of the Congress of the United States in appropriating one billion dollars to create a new urban environment, places on all of us a responsibility we cannot duck. The question is: after we have so painfully cleared away the old environment, dislocating hundreds of thousands of families, and after we have spent our billion dollars, will the new environment that we create be worth the effort? When we look at our preparation for urban design both in terms of concepts and people, we must pause with some concern. We have the three principals; planning, architecture, and administration. What we lack is the capacity to function as a whole. Architects have lavished almost the entire extent of their resources on the designing of individual buildings. The planners have tended to confine their efforts to the creation of broad and unmaterial concepts such as zoning, land-use control, density standards, and criteria. The administrators and policy makers, who really set the basic form of the urban environment, commonly regard the architectural aspect as something you purchase at the end. We in Philadelphia who have worked within the environment in our city which is favorable to creative thought have a deep conviction that we have rediscovered an underlying principle which does give form and unity to the urban design effort. The *esthetic principle* on which we have been working has three parts: first, quality of space; second, the articulation of space, for its experiencing by people; third, the continuity of space experience, the realization that we are dealing not with one single sensation but a series of sensations in sequence. Architecture in urban design, then, is the articulation of space so as to produce within the participator a definite space experience in relation to previous and anticipated future space experience. *Administrative action* in connection with redevelopment is our next concern. In our early planning for Philadelphia redevelopment, we continually reminded ourselves that the only justifiable purpose for spending money in this area was the arresting or eliminating of blight. We developed a hypothesis: neighborhoods are dynamic organisms which have within themselves the seeds of self-regeneration. They consist of pockets of decay intermixed with substantial sections, which with proper stimulus can be induced to fix themselves up. In view of the immensity of the problem, money should be spent only on the clearance of the worst spots on a disbursed basis, but within the framework of a total neighborhood plan developed with local groups and providing for the needed community facilities. Thus, a total process can be set in motion with a series of small individual actions contributing to the evolu-

*Federal and State park areas are included within the Old City Redevelopment Area Plan* (below). *The greenways* (shown in color) will *connect such historic buildings as Independence Hall, Carpenters Hall* (below right), *and the First Bank of the United States. A series of connecting garden walks, in the centers of blocks, will make it possible to progress from one historic structure to another within a continuous series of vistas. Harbeson, Hough, Livingston & Larson, Consulting Architects.*



tion of a sound, total-neighborhood structure. We developed the over-all East Poplar plan on this principle and divided it into a number of small projects designed by individual architects. However, the design directives for co-ordinating the composition were too weak to survive the process of work by different offices. It therefore became incumbent on us to find some way to co-ordinate design. Louis Kahn gave us the key through his work on a housing project in the Mill Creek area. In the design of his first four-block area he started by laying out a design system for the entire Mill Creek redevelopment area, including a backbone of connection walkways which gave him the directive for the detailing of his small project. It also gave us the directive for the principle of co-ordination of individual projects in redevelopment areas. The *Greenway Principle* is a basic linear system of connecting greenways, focusing on significant existing symbols such as churches, schools, and clubs, forming a skeletal backbone which gives significance and meaning to a series of individual projects, and provides a sequence of sensations for the people moving through it. It is a very humanistic principle that the community will be seen as a series of meaningful space sensations by the people who inhabit it. I felt at first that the application was limited, but I increasingly find that this approach to design forms a firm base for all other effort. When we face the problem of spending the next half billion, based on the successes and failure of our efforts with the first half, I feel that this fundamental design concept should play an enormous part. I think we should admit that most of our efforts so far, in individual projects, have touched only a tiny proportion of the total problem of blight. My proposition is that we use the greater part of the next half billion to create a disbursed series of open-space nuclei and greenways evenly distributed throughout the blighted neighborhoods on the basis of a fair and uniform standard. This would avoid the artificial concept of the creation of divisive boundaries between "neighborhoods" which never stay put anyway. The concept which I have described is altogether contrary to the established procedures in the Federal administration, which are based on a whole series of convenient ways of going about things. The kind of design approach discussed here must be recognized in the beginning of administrative directives. Unless these are formulated or directly influenced by a designer they cannot possibly take into account the primary design relationships. The concept of a firm position of leadership in the formulation of public policy and the assumption of an important administrative role where policy is formed is almost foreign to the thinking of the architectural profession. The planners have traditionally considered the design of physical structures as a detail. Administrators almost invariably think in terms of specific projects and procedures rather than the underlying correlative relationships. What we need is the architect-planner-administrator, and if we ever get it we will then really have an urban designer.



*A number of landscaped courts at the concourse level bring the greenway system within Penn Center* (left), *a building presently under construction for the Pennsylvania Railroad. Vincent G. Kling, Architect-Site Plan Co-ordinator.*

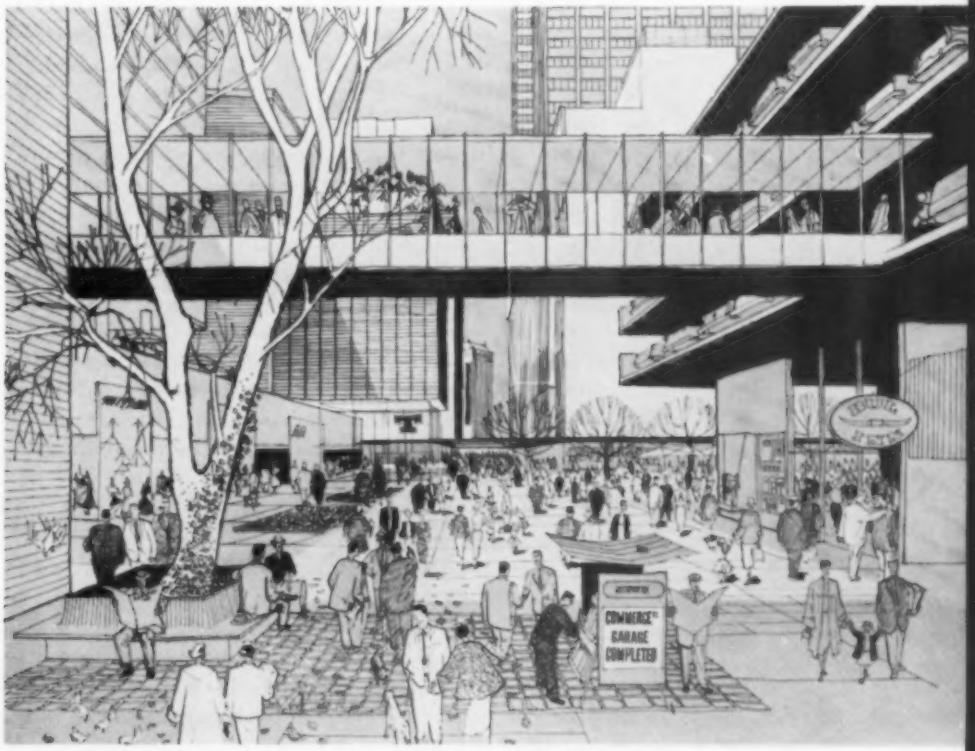
*A greenway system* (shown in color) *of open public spaces will give the Mill Creek Redevelopment Area* (below) *a new character without extensive demolition. The main core is organized to tie together schools, playgrounds, shopping and residential areas. Louis I. Kahn, Consulting Architect.*

*Apartment buildings* (below left), *many completed in 1955, form a focal point for the greenway system. Louis I. Kahn, Architect.*

# *urban designs of today: Fort Worth*

**VICTOR GRUEN:** One day we were approached by a private client. He said that he was the president of the largest utility company in Fort Worth—the Texas Electric Co. He is losing business downtown, because downtown is losing population and business, and therefore heavy investments are not fully utilized. On the other hand, in the suburbs where he can do all the business he wants, the investment cost is still increasing. He asked, "Is there any possibility of saving my downtown investment, and if so, how?" We said, "Let us try whether the city core, the downtown area of this city of Fort Worth (a city of about 350,000 inhabitants with a trading area of about 1,000,000), can be rejuvenated." We projected our program for 15 years. We then made inventories; we estimated the population of 1975 on the basis of the growth between 1940 and 1955; and we figured out how much space (for those activities which need space) there should be ultimately in the core area of the metropolitan city. From the first, we stated this maxim: The downtown business-core area of a city should be as compact as possible and should be an area of high productivity. That means many uses which have a low-productivity figure — used-car dealers, second-hand business, marginal enterprises, a good portion of the warehousing—were eliminated. We know that each person uses 20 sq ft of sales area, and on that basis we figured out the retail need for the city core for the year 1970 and found that, though the population will only go up by 60%, retail facilities will have to go up by 300%. We then came to a surprising result: that even by increasing merchandising space by 300%, even by increasing all other uses, we were able to compress the future downtown area into the same area as the present core area. But we hadn't figured the use of the automobile. We came to the answer that 152,000 cars would enter the downtown area of Fort Worth by 1975, and that these cars alone, without any buildings, would need three times the area which Fort Worth's downtown now occupies. This left us only two possibilities: leave the city to the cars—or throw them out. We decided to stop the cars *outside* the downtown core area and, therefore, the aim of the plan became to build a pedestrian city. There are six major parking structures: multiple-parking structures built so that they are directly accessible from the loop freeway and built in such manner that, like fingers, they reach into the midst of the downtown area. In addition, we have certain loop roads, which usually go along the walls of these large garage structures and which serve buses, taxis, airline limousines, and other public conveyances, in order to bring them directly from the loop freeway, close to two minutes from the center of the city. Within those

parking structures are moving sidewalks, so that after you have left your car, you step onto the moving sidewalk and are brought to the exit which is only two minutes from the center of the town. The next question which came to us was, what to do with trucks and other service traffic? We either could have it in the areas where it is now and then feed it off on top, or we could lift it up and feed it off below, or we could have it underground—and that is what we decided to do. It turned out that it was the cheapest and best method to solve the problem. The buildings will receive in the basement, thus making the first-floor areas free for productive purposes. The underground system consists of one underground loop and a number of short service roads with turn-arounds on the ends, to supply every single building in the downtown area with underground service. All utilities will be removed and put on the walls or ceilings of these underground roads. This plan is being accomplished without demolishing a single structure over three stories. Any structure of any importance is maintained and remains undisturbed. Only some low structures—and that explains the placement of these parking garages and of the freeway—are affected by the plan, and most of them are of no value and in a decrepit condition. To the Fort Worth people, it was very interesting and encouraging that in every picture they could recognize their own distinctive structures. If one compares the size of the compact new downtown area with New York, it reaches from 59th Street to about 43rd Street. But a walk through Rockefeller Center to St. Patrick's Cathedral is about the furthest distance you would have to walk between the ends of two of the parking garages. Therefore, our contention that people *will* walk this distance, is not a theoretical statement. Automobiles have disappeared and city streets have gone. Instead of long bands bordered by parallel buildings, the streets become a series of different kinds of spatial rooms. Some narrow, some wide, sometimes widened out to plazas, some reduced to a much greater narrowness. In some places, additional buildings have been built within existing street patterns; and in some cases streets have been covered. In other cases, low buildings have been demolished or existing parking areas taken over as public spaces. Thus, moving around the new pedestrian city, we will experience a steady surprise of new features—of new space experiences. A new kind of urban environment is created. This is the appearance (*below*) which one of the streets might have. In this case, a bridge leads from one of the parking structures to one of the hotels. The street has been partly re-paved; landscaping and rest benches have been added, and the entire surrounding becomes one undisturbed pedestrian area. In such a pedestrian area, new interest in architecture will arise; for, I believe, one of the reasons for our great complaint about the uninterestingness of modern architecture is to be found in the fact that nobody walks to see it, and I believe that the pedestrian city will offer new possibilities for architectural expression and art.



*Dean Sert, Mayor Lawrence, Robert A. Little, and Richard J. Neutra*

*Photo:* Courtesy, Christian Science Monitor

# in CONCLUSION

**JOSE LUIS SERT: Some people, judging from the papers, may question how much basis of agreement there is in this conference, but if you examine the projects exhibited here, you will find that the problem facing us is that there is too much agreement among the architects. I think that there is also, at heart, a great deal of agreement between the architects and the landscape architects. Their fields are close: they are both shaping space, open or enclosed, and their problems are very similar. When we come to the city planners and the architects there may be a little conflict. There is a certain misgiving among architects, as someone has said here, that city planners do not know anything about the three-dimensional world we want to help shape. And the city planners think the architects know nothing about city planning. The result is when we come to the field of urban design, where both should meet and shake hands, there are many who are not prepared. But I do think there are quite a few members of both professions that feel closer to one another and I do not see why these should not be the ones to meet and go into the field of urban design. The more one works in this field—and in the last 20 years I have had to work out pilot plans for 12 cities—the more one reaches the conviction that we cannot work with very simple formulas which are indefinitely repeated. If we want to get an element of life into the city we have to have the formal and the informal, the intimate and the monumental. If every little space wants to be monumental then, finally, when we come to the center of the city there is no monumentality at all. So, everything is a question of scale and the comparative contrasts of scale. Now we know that the new city calls for a series of new elements—that all things are not going to be as they have been in the past—and the shape these may take is something we should investigate. In the exhibition here, Pittsburgh, Philadelphia, Chicago, and other cities show things now being realized that are the result of Utopias predicted 20 years ago. Today these Utopias are realities. So, in reply to "where do we go from here?" I would suggest that we adopt a positive attitude. We shouldn't wait too long, for the cities may move faster than we do and when we discover new and better design formulas we will find the work has already been carried out by other hands. When we ask how cities should be designed, I think it important to bear in mind that we are not designing for the mayor, or for the planning commission, or for the traffic expert—but only for the people and with the people. Without this we shall never get ahead. If the people one day want good cities, and if they start seeing cities that are better than others, they will make their demands known to the mayor. Here I would like to refer to the recently published report on the Visual Arts at Harvard. This University is now seriously considering design as part of general education. It is terribly tragic that while people know how to read and write, they have no way of reading things in three dimensions and, as a result, we are talking completely different languages. So it is a very difficult world for the designer. But if one does happen to come across someone in an administrative position who is also able to understand design, things move very fast, as I have recently discovered in Cuba. There, the Minister of Public Works happens also to be an architect, so when the planning committee meets we are able to reach decisions in ten or twenty minutes—because we are talking about things we both understand. Of course, we must start with general education on the school level, but I think the process could and should be precipitated by the use of radio and television, both for the people in general and for classrooms. Finally, therefore, I think we should in our next conference plunge deeply into these dangerous waters of the design phase of planning—or the urban design phase of architecture—for I believe it is only by throwing ourselves into these waters that we shall learn how to swim. Before closing I would like to express my warm thanks to the Committee of the Faculty of this School—Wells Coates, Charles Eliot, William Goodman, Huson Jackson, Jaqueline Tyrwhitt—who worked hard to make this conference a success.**

FOLLOW-UP CONFERENCE ON URBAN DESIGN: *What urban design principles can be applied to the renewal of our cities? The Graduate School of Design of Harvard University will organize a limited workshop conference on this subject in the fall. It is hoped this will form the basis for an open conference in Spring 1957.*

## critique:

# Canada's New Towns

by Peter and Cornelia Oberlander*

*The setting for a good life must be hewn out of the unknown wilderness, pioneers must become oldtimers bound together by an enthusiastic love of the town and to its unusual qualities. They must be given the utmost freedom to develop their lives and that of their community to fit their needs, their desires and their pocketbooks. And so the plans of Kitimat, both operational and physical, have been developed to serve as a flexible setting for good living that is open to continuous growth and expansion.*

So wrote Clarence Stein, the brilliant co-ordinator of planning for Kitimat in one of his early reports to the Aluminum Company of Canada, his client. Since then, a great deal of publicity has accompanied the planning and development of Kitimat, the new town along the British Columbia Pacific coast, some 500 miles north of Vancouver. It is indeed a remarkable undertaking; nevertheless, Kitimat is by no means the only new town planned and built in Canada. Perhaps more than any other country, Canada is the land of new towns. These are usually single-enterprise communities, located beyond the continuously settled areas and play an exceedingly important part in the economy of the nation. They seem to be destined to play an even more significant role in Canada's future development. A recent survey discovered that nearly 160 single-enterprise communities have been planned and built in Canada, with a population exceeding 200,000 persons. In these communities there are upwards of 26,000 housing units, together with all the usual urban equipment, shops, schools, public buildings, roads, parks and playgrounds.[1] Not many of these communities are, of course, as large as Kitimat, but basically they have faced and are facing quite similar problems. The term "single-enterprise communities" seems to be a descriptive and comprehensive one for these, rather than the usual "new town." These communities usually have come into being because of the decisive action of a single enterprise, either industry, or a government agency, or a defense establishment, or a large land-development company. Regardless of the motivation of the initial builder, the town is tied to the single enterprise that generated it in the first instance. This is true for Kitimat.

If new-town building is not new in Canada and if most of them were planned, that is to say, built in accordance with a previously developed scheme, what is the remarkable achievement of Kitimat? After all, even ALCAN has had previous town-building experience, such as Arvida in Quebec, some 30 years ago.

Kitimat's just claim to fame rests with the fact that, for the first time, a complete planning program was developed by Clarence Stein in which the total organization as well as physical needs of the new community were anticipated, not just a layout plan of streets and building lots. Some 20 different specialists acted as a team of consultants under Stein's leadership, to think through all the possible needs of the new community. They tried to anticipate not only the physical needs but also the whole range of social, economic, political, and organizational demands that future families will make upon their community. Close to a $100,000 worth of research preceded the site planning and building of the town. Layout and design were in a way subordinated to what Stein called the "wholistic" approach. He wrote: "What we were really after was the life of the individual, the family, the group, and only secondarily the school system, the health system, the transportation system which are only joint means to that end." Physical planning in Kitimat was thoroughly integrated with functional planning from the very beginning; maps and layouts alone were not sufficient. For example, the functional plan for education was expressed in terms of school administration, composition of schools, optimum size and number of classes and students, by grade. This was translated into a physical plan showing number, location, and sizes of school sites—relating these to parks, transportation, health clinics. In the case of police and fire protection, the physical layout takes account of the functional arrangements recommended for the municipal government's organization. Physical and functional planning were considered totally interdependent and shaped each other. Therein lies Kitimat's real importance and news value.

Its land-use plan and layout pattern follow fairly closely previously established principles. The looproads, the dead-end street, the super block with its internal green areas and pedestrian circulation, all reflect the early concepts of England's garden cities, or Radburn, or

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[1] Queen's University, The Institute of Local Government, *Single Enterprise Communities in Canada* (Ottawa: Central Mortgage and Housing Corporation, 1953)

the U. S. Greenbelt towns. Good and honorable as this ancestry to Kitimat's basic planning pattern is, it is some 30 years old and represents solutions to living and working in densely built-up, highly urban areas; it hardly reflects the heroic, near-wilderness landscape and vegetation of British Columbia's coast. Architecturally, suburbia (or in current British terminology, subtopia) seems to be emerging from among tall firs and cedars, with 12 to 15 feet of snow for four or five months of the year.

Although courting dangers of oversimplification, Kitimat's success as one of Canada's new single enterprise communities can be asessed in three ways:

1. An exceptionally comprehensive functional and land-development plan was made, attempting to anticipate the whole range of future urban needs. Its comprehensiveness and thoroughness established the plan as a landmark in programming town development.

2. Due to the company's earnest desire to create a democratic and free enterprise community and avoid every aspect of "company town," the implementation of the plan beyond the clearing of land and layout of roads was left to the free interaction of supply and demand; consequently timing of development and some of its programming were only indirectly influenced by the land developer and those who had prepared the plan. It seems somewhat overconfident to believe that a fully democratic or "free market" community can be created literally overnight, when the only and all-pervasive reason for its existence is one employer. Experience in other comparable Canadian communities has shown that the mere fact of municipal incorporation does not mean that the residents enjoy real self-government. In a few instances in Quebec and Ontario, the town council was easily captured or dominated by the company and this happened without malice of forethought or any diabolic intentions. The company simply constitutes the major taxpayer and is usually the sole employer, and any one living in the town is beholden to the company in the usual employer-employe relationship. Because the company is the major taxpayer, it appears inevitable that even the most democratically elected council will defer to the wishes of the chief contributors to the tax coffers.

3. The plan for Kitimat and its current development concerns the now incorporated area of the District Municipality of Kitimat. The area surrounding this new municipality is not subject to planning controls. At present, Kitimat is accessible by water, by air, and by railroad, and by 1957 the Kitimat-Terrace road connecting the community with the rest of B.C. will be completed. Terrace itself, a community of a few thousand people, is bursting at its seams with new families who have found employment in Terrace, due to freight and passenger traffic through to Kitimat. The latter is likely to be very extensive owing to the pent-up urge of Kitimat's workers to get away periodically from their isolated and quite self-contained environment. In anticipation of these conditions, building land in and around Terrace has become subject to extraordinary speculations and the land along the road toward Kitimat is likely to fall victim to similar pressures. There is, at present, a "reserve" on this land, but this readily could be broken down by intensive popular pressure. The strict land-use regulations and restrictions in Kitimat themselves will contribute to these pressures. Stringent building and planning regulations in Kitimat impose certain financial hardships on small builders or commercial developers. The pressures to create buildings below standard will increase. Experience elsewhere has shown that once the new road is established, a rash of ribbon development is likely to occur and in that sense compete with and threaten the orderly development of Kitimat itself. Adequate provincial action is obviously essential, through such means as making the road a limited-access highway, imposing rigid land-use restrictions along it, and generally controlling the development of the land between Kitimat and its nearest community, Terrace, through regional planning.

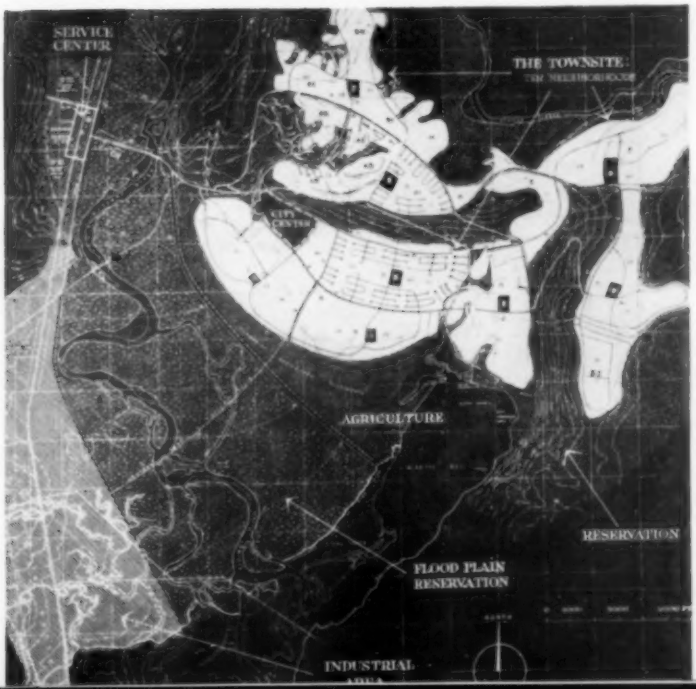
This has not yet happened and the prospects of an early decision seem uncertain. It is clear that the best plan and organization for Kitimat itself can be jeopardized by the lack of equal public control over land development in contiguous areas.

There are other "new towns" being built across Canada. A very different kind has been developed near Toronto in Don Mills, demonstrating different ends and means of building a new town. Extensive tracts of land were assembled by a land-development company some five years ago, in order to create a complete and, it was hoped, self-sufficient but diversified community north of Toronto. In contrast

to a single-enterprise employment basis, Don Mills has a great variety of industries in its area and provides land for a whole range of urban facilities; single- and multiple-family housing, apartment buildings, shopping centers, parks and playgrounds, and schools. The basic motivation behind Don Mills was not to provide housing for industrial employes but to build a complete community as an economic venture in land development. A comprehensive plan was prepared by a group of young and enthusiastic Canadian planners and architects, who were on the staff of the land-development company. They have progressively guided the implementation of the plan.

**KITIMAT.** *Clarence S. Stein, Co-ordinator and Director of Planning; Roger Willcox, Assistant to Stein; Mayer, Whittlesey & Glass, Architects-Engineers-Town Planners. Aerial view* (above) *shows near-wilderness landscape and vegetation out of which a new town is presently emerging. Neighborhood A* (foreground above *and* right) *of this single-enterprise community is shown in the early stages of development; service center and smelter site lie across Kitimat River. Apartment buildings and houses* (across-page) *are typical of residential units being erected.*

Photos: Aluminum Company of Canada Ltd.



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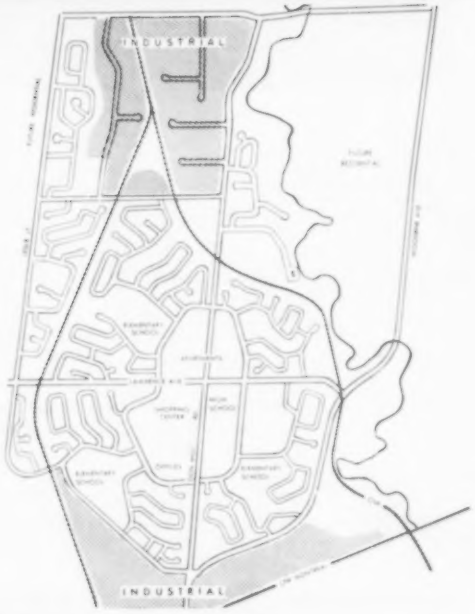


The concept was to create a diversified and complete community under the aggressive leadership of one landowner who exercises complete control over the nature of the development, its timing, and implementation. Don Mills constitutes a truly free-enterprise land-development venture under the over-all guidance of a prudent landowner, acting under the best land-planning and building development advice. Very early, the participation of half a dozen young, practicing architects was enlisted in developing housing types which local builders could use in developing their various tracts of the Don Mills townsite. By this method it was hoped to overcome the usual problem of either monotony of house development by a builder using a single building type, or the visual chaos created through random diversification of superficial building elements, such as multi-colored doors, variously pitched roofs or crudely varied window ornaments, for the sake of variety. Don Mills, as a new town, represents a spectacular success in building a new community very quickly and harnessing the usual commercial channels of construction. Site planning and architecture have played their appropriate roles and the visual results are remarkable. This presents eloquent testimony to the benefits to be derived from the leadership of an energetic land developer, relying on the continuing and continuous staff advice of planners and architects to guide the new community.

Gilbert A. Milne & Co.

Despite Don Mills' obvious success in building a new town quickly, and in accordance with a plan, and bringing industry into the total scheme, it is in the community-to-industry relationship that Don Mills has not fulfilled its expectations. Industry that has located in Don Mills, by and large, does not draw its employes from the families currently living in the town. In that sense, Don Mills is not a self-sufficient community and, in a way, has been engulfed by the metropolitan journey-to-work spiderweb of Toronto. Two-thirds of the gainfully employed in Don Mills are working outside the community—in most instances, in the offices and service occupations of

Panda Photography

**DON MILLS.** *M. L. Hancock, D. W. Pettit, George Wreglesworth, Planning; D. H. Lee, Staff Architect. Even a casual drive through this free-enterprise development indicates the wide variety of urban facilities and the high standard of site and architectural design. Single- and multiple-family houses* (across-page bottom and below) *James Murray, Architect, are only two examples of many architect-designed residential units, constructed by private builders.*

Panda Photography

*Don Mills Shopping Center* (right), *John B. Parkin Associates, Architects-Engineers, parks, playgrounds, schools, and industrial developments* (top right), *Clare G. McLean, Architect, are all part of the total plan. Within the strict standards of the development company's planning and architectural-staff policies and programs private builders and industrial concerns have been encouraged to buy or lease land for their own building projects.*

Max Fleet

Toronto—whereas an equal proportion of the industrially employed population of the new town commutes to Don Mills from surrounding communities. A thorough analysis would be needed to assess fully this problem and to prescribe such remedies as exist to make the residential and industrial location correspond more nearly to its planned intentions. Residential development in Don Mills seems to have attracted a far greater proportion of white-collar workers and junior executives working in Toronto than was anticipated in the plan. Industrial workers, on the other hand, seem to prefer to live elsewhere, possibly under less strict building controls and to some extent "progressive" conditions. It may indeed be a combination of psychological and economic motivations which have made Don Mills a successful new town architecturally and from a site-planning point of view but has twisted its self-sufficiency premise into a complex journey-to-work for most of its residents and those employed in its local industries.

A third kind of "new town" can be studied in the development of Powell River in British Columbia. This is an old-style company town, where a pulp-and-paper mill created a small urban community before World War I. The company owned and operated a hotel, stores, and several hundred houses. Powell River is some 70 miles north of Vancouver and until recently could be reached only by water and, later, by air. In 1951, its population was slightly over 10,000 persons, which encompassed four different settlements: Powell River Townsite, itself, owned and operated by the paper-mill company; Westview and Cranberry Lake, two small, incorporated, village communities south and west of the townsite; and Wildwood, an unincorporated area of houses north of the millsite, across Powell River. After 40 years of operation, the Powell River Company was anxious to withdraw from owning the townsite and to sell the houses and other buildings in the area. At the same time, it was eager to foster the creation of an independent self-governing municipality encompassing all the communities where its employes and staff resided. Consequently, after evident popular support for the idea through a plebiscite, in March, 1955, a special act of the provincial legislature created the Corporation of the District of Powell River. It incorporated in one municipality all the scattered communities as one urban political unit. Preceding incorporation, the company offered to sell all its houses, in the first place to those who rented and then to anyone else who wished to buy them. All buildings were speedily sold. Today the company, politically merely another member of the community, however, is still responsible for 75 percent of the tax income of the new municipality. The policy of sale of the company houses, as well as establishment of local self-government, was based on a study undertaken by students of the University of British Columbia's School of Architecture, under staff guidance in the summer of 1953. This project was sponsored by the Powell River Company, to enable it to assess the future development that was likely to take place in Powell River. Perhaps the most important influence upon the changing nature of the community, that was anticipated by this student-staff planning report, was the early connection of Powell River with the outside world, by highway. During the summer of 1954, it became possible for the first time to drive from Vancouver to Powell River; this allowed some of the 2000 motorcar owners, who previously had a mere 12 miles of road upon which to exercise their motorcars, to leave their relative isolation at will and reach Vancouver in five hours. The road connection of Powell River with the rest of the Province not only meant more freedom for those who lived in Powell River but also was likely to affect radically the size and economic structure of the community. It was anticipated that it may bring in other industries or forms of employment which efficient road transport could entice and justify in Powell River. The company was anxious to encourage this development and used its influence throughout the fledgling stages of the new municipality to proceed slowly with extending municipal services and to prepare land for building, in relation to the original plan prepared by the university student-staff group. In terms of their own millsite development, they retained a landscaped architect to plan and program future location of new buildings and to prepare detailed plans for parking areas and road patterns that would rationalize the layout of the major industry within an orderly municipal-development plan.

Despite the company's sale of houses and the establishment of an independent municipality, the company remains a major landowner; some 1200 acres in the very heart of the enlarged municipality of Powell River still belong to the company. The orderly development of this area is of crucial importance, since it represents a vital link between the emergence of a comprehensive "new town" and the old "company town" that has grown and developed over two generations. The development of this area is now under active consideration and may well be guided by the original scheme of the student-staff report of the University of British Columbia.

These three examples of "new towns" in Canada, each vastly different in scale and approach, seem to have three aspects in common, demonstrating a growing Canadian tradition in planning new communities and building them accordingly.

1. The essential need for a comprehensive functional and site plan for the community (this is well demonstrated in Kitimat) and the importance and value of thinking through completely all site development, community, organizational, and entrepreneur's decisions necessary to build a "new town" in every sense. This can be contrasted with the mere projection of a layout of building sites, road allowances, and establishment of building regulations in the hope of preventing the *worst* but not necessarily encouraging the best.

2. The comprehensive development of a townsite in accordance with a plan by a single entrepreneur or under the leadership of a single company (this is well illustrated in Don Mills). Here the determined commercial leadership ensured the speedy realization of a complete com-

**POWELL RIVER.** *J. B. Chaster, R. M. Opie, J. B. Macdonald—student authors; Prof. Fred Lasserre, Director, School of Architecture, and Prof. H. Peter Oberlander—faculty advisors for townsite proposals; Cornelia Oberlander, site and landscape planning of millsite. At strategically placed millsite, river drops 90 ft from lake level to sea, generating considerable power. Houses* (aerial photo), *formerly company-owned, are now incorporated into new municipality of Powell River. Change-over to self-government was based on study undertaken by students and faculty team, as were proposals for development of town site.*

Aerial Photo: R. Metcalf
Model Photo: Photographic Services of the University of British Columbia

munity in all its social, economic and political and, best of all, architectural aspects.

3. The importance of continued leadership of the major employer in most "new towns" predicated on single enterprise economy (this is demonstrated in Powell River). More than 160 "new towns" have been built during the last generation in Canada. Since these communities were founded and exist initially for the purpose of housing industrial employes, a continuing responsibility for industrial leadership is indicated. It is clearly in the enlightened self-interest of the company or the land developer. The town of Powell River and its relationship to the company is a good example of an originally restricted company town being guided to grow into a fully operative, democratically organized municipality in which the company continues to play a constructive role. The continuing leadership of the entrepreneur in the design and implementation of the orderly development of the "new town" through planning will assure that the town-building which is truly "everybody's business" will not deteriorate into becoming "nobody's business."

## critique:

# The Architecture of Redevelopment in U.S.A.

by Carl Feiss*

The history of cities is also the history of architecture. Throughout time, since men began to congregate, they have built communities for the immemorable purposes of social interaction; they have built an architecture shaped by their times, their skills, their tastes, and their ambitions. Some cities have remained in place for thousands of years, great antique shops and graveyards of many cultures. Others have replaced vanished predecessors, which left a trace in a street pattern or a name. The destruction of cities has been a commonplace since their very beginning. The names and ruins of the deceased are legion: Mohenjo Daro, Troy, Thebes, Carthage, Chichen Itza, Jamestown. And war, which has been the most common and greatest cause of destruction, has eaten out the hearts of living cities as well as dead—Coventry, Rotterdam, Hiroshima, Dresden, Warsaw, and Stalingrad. In fact, it has been a common objective of wars to destroy cities. And it has been the objective of people in cities to rebuild in the ruins.

In North America, where there has been no city destroyed by war since Grant took Richmond, the ravages of obsolescence and decay have left living ruins—ghosts of past vitality and outmoded cultures. These vast, grim haunts at the present rate of exorcism would take two hundred years to rebuild.[1] However, they are now becoming the object of a large-scale and exciting replanning and rebuilding program involving several billion dollars. American architects are now busy, for the first time in their lives, with the actual rebuilding of their own cities. *What are they doing? What is the design character of this rebuilding program? What kind of planning and architecture is envisaged? Will the results be worth the efforts?*

* *Planning and Urban Renewal Consultant, Author, Educator, sometime P/A Columnist, of Washington, D. C.*

[1] *Report of the President's Advisory Committee on Housing Policies and Programs, 1953.*

### the scope of redevelopment

Early in the drafting of the Housing Act of 1949 it was clear that the money spent on the clearance of slums and blighted areas and their redevelopment would be wasted if rebuilding projects were not in accord with a general plan of a whole locality and the project plans themselves did not have some order, consistency, and relationship to reason and to local objectives for city improvement. The passage of the 1949 Act and of state enabling legislation made available to many cities funds and the organization for large-scale rebuilding projects, several of which are the subject of this critique. Subsequent Federal legislation, in particular that of the Housing Act of 1954, was modified to enlarge the scope of city rebuilding by the adoption of the concept of area-wide improvement or renewal as distinguished from the more restrictive project philosophy which had grown historically out of the public-housing project method, dating back to the early 1930's.

The architecture of redevelopment, of which this is perhaps the first attempt at a critique, is to be distinguished from the architecture of comprehensive urban renewal. Federal Redevelopment legislation and financing predates that of the more inclusive renewal by nearly five years and in some states by as much as six or seven. So redevelopment projects as such have had a head start. We have, at the time of writing, so few examples of renewal-area projects in an advanced planning stage that we are unable to judge quality or, for that matter, whether the comprehensive renewal concept will produce continued large-scale and high-quality city renaissance. If sights are kept high and rehabilitation and conservation programs are combined with the dynamics of creative redevelopment and new building, I am certain that such a renaissance will occur.

From the beginning of the national redevelopment program every effort was made to induce localities to "think big." The time and money involved in the acquisition of slums and blight would be wasted on piddling spot projects which, upon completion, would disappear and be forgotten in the chaos of banal architecture which constitutes most of the American city. This has happened too often in the past. The problem was to find how to think big without being dreamy-eyed, to design big with skill and taste, and to finance big without going broke. The problems of the relocation of displaced persons and families and the provision of community facilities in accordance with community plans are outside the scope of this article. They are not, however, to be minimized. Quoting Henry Churchill: architects in particular must remember that "Cities are for People."

### recent history of large-scale design

Since the halcyon days of the "Grand Plan" of the Beaux Arts Institute of Design, from approximately 1910 to 1930, the American architect had little or no practice in large-scale design and seldom has had an opportunity of putting such plans into effect. The National Capital, a few civic centers, state capitol groups, and college campuses have afforded occasional opportunities for group planning design of some diversity, between 1910 and World War II. Most of the results are flat failures. We cite the St. Louis Civic Center as a large-scale and horrendous example of architectural mish-mash which has only one redeeming design feature—space for light and air and growing things. In San Francisco, Denver, and Cleveland, where some formal architectural order was maintained in the large civic centers, the results were merely classicist banality of a very low quality. The best that can be said for them is that they are dull importations.

College campuses in the immediate pre-

redevelopment planning days were hardly better, striving for the most part for a false sense of age and tradition, with dark *romantique* quadrangles matching the sepulchral gloom of the pseudo-medieval, pseudo-Georgian, and pseudo-Colonial buildings themselves. This was at least consistency in design—nonsense notwithstanding.

Public housing had done better. A few scattered projects by the beginning of World War II had evidenced a design quality of some maturity, despite restrictions slapped on design by Washington headquarters. Projects in San Francisco, Cleveland, and several smaller Florida cities (among others) were showing originality in design, site layout, and livability. Catherine Bauer's book, *Modern Housing* (1934) and some exciting publications on German, Dutch, Scandinavian, and British large-scale housing projects, ten or fifteen years ahead of American architectural design in this field, found their way into the architects' offices. While, all too frequently, the results were labored imitations, we began to see in this country large-scale group design in which new forms met new situations with harmony.

In the meantime, experiments in site planning and building grouping, which had begun with Henry Wright and Clarence Stein at Radburn, New Jersey, in 1927, had created a new momentum of rationality and space planning. The superblock and interior-park concepts, the integrated neighborhood and group architectural design developed to full maturity in 1937 with the brilliant plan for Greenbelt, Maryland; Hale Walker, Town Planner; Clarence Stein, Consultant; Ellington & Wadsworth, Architect. Since then, nearly every public-housing project and many private developments have incorporated these principals, with varying degrees of success, of course; but progress has been made, even in some of the worst.

In large-scale private housing of the high-rise type, we can point with pride to the design of only a very few pre-1949 projects. Fresh Meadows, the New York Life Insurance Company project on Long Island, designed by Voorhees, Walker, Foley & Smith and "40 Central Park South" apartments in New York, by Mayer & Whittlesey, might be considered to top the list, along with the Eastgate apartment building in Cambridge, Massachusetts, designed by a group of Boston architects and engineers. These, coupled with contemporary European and Latin American examples, have had a profound influence on recent redevelopment projects. But we must grant that in the field of private high-rise residential developments, the American architect has been both unimaginative and timid. The record does not add up.

In group planning for commercial architecture, we have even less for the design record. Rockefeller Center remained the unique example of large-scale commercial development with some sense of order until the advent of the Golden Triangle redevelopment in Pittsburgh (non-Federal). Neither uses space relationships to maximum advantage but we should be thankful for the *little* example they set, because other than one in Stockholm and another in Caracas, Venezuela, foreign experiments in large-scale commercial groupings since the French Renaissance have consisted in the main of Garnier's, Corbusier's, and Mendelsohn's stimulating sketches. Hugh Ferris and Richard Neutra, in this country, should be added to these. Curiously enough, these hypothetical schemes seem to have been extraordinarily effective as design propaganda. They demonstrate the eternal power of hopeful ideas and the validity of architectural dreams.

Industrial group planning has only recently come of age and prior to World War II developed so slightly as to afford little background for today's design.

One final stimulus to large-scale contemporary group design has been the series of European and American World's Fairs or Expositions. On the whole, those of the last twenty-five or thirty years have been inferior in scale, imagination, and design to the great Expositions of the 19th Century. However, they have given some practice in nonresidential, large-scale design to a few of today's architects and may have helped in removing mental blocks.

On the other side of the record, the general American cityscape, while tremendous in scale and frequently dramatic in the aggregate, remains a nasty fungoid growth. Individual buildings, viewed between the dray-horse blinders of the last century, may stand nobly in a fictitious vacuum of assumed isolation. In the reality of the group context, the weird relationships they maintain with their fellow structures negates harmonies of surface design or sculptural form and any pretense at semblance of unity and order in the cityscape. The total result is ugly—as ugly as any man-made creation in history. It couldn't have been done without architectural training, but no amount of esoteric ratiocination on the part of the architects can make their sublimest creation stand lonely in the crowd.

Just because of this myopic fiction, the more skyscrapers you combine on a grid of rectangular city blocks—skyscrapers built to the sidewalk and occupying 100 percent of the land—the handsomer is the city. This is irrespective of the stalagmite profile from any distant angle, or the resemblance to eroded arroyos in a vast badland, which constitutes the street perspective. And a crowded parking lot, no matter how shiny and svelte the individual bugs, in the aggregate is no handsomer than a mass of Japanese beetles.

### the effect of historic large-scale design

Why dwell so long on these design antecedents to city rebuilding? Redevelopment design has been subject to this history—both the good and bad elements of it—and it is only natural that it should be so. For no matter how we like to lay claim to originality, designers are not necessarily innovators. The few who are, stand out clearly. Happily they do exist.

One curious effect of the acceptance of the postulate that a heterogeneous pile of architecture is automatically beautiful is that it keeps cropping up in their redevelopment designs. Considering human frailty, it is easy to understand why the architecture of the famous proposed Back Bay Center Project in Boston was such a design hodgepodge. It not only instinctively accepts the above postulate, but intending to be the showpiece of collaborating architects, tries desperately to provide a spot for each for his building to stand alone on the frail substance of a mental island. But when one firm is designing an entire project as large or

larger than the Back Bay Center, such an excuse is untenable. A mere enlarging of the spaces between disparate buildings does not necessarily make them beautiful. The Pittsburgh Golden Triangle is a case in point.

The redevelopment of Pittsburgh's Golden Triangle (Ralph E. Griswold & Associates, Landscape Architects; Clarke & Rapuano, Landscape Architects-Engineers) is one of the most courageous and worthwhile efforts in this nation's history. It is a great historic milestone in the collaboration of private and public enterprise. It turns a blighted commercial jungle into a handsome park, at the confluence of two great rivers, where rise shiny new metal skyscrapers backed by the infinite amorphology of the standard American cityscape. It was an exciting idea to execute. It took imagination and extraordinary managerial talents. That the result, for all of its grandeur, is not an entire success is regrettable in the extreme. The fault lies with the architectural concept of the eastern end —the side against the ragged background of the city. If there ever was a place for unity, order, and a cohesive dignity, here it is. The plan is for a symmetrically designed triangle, a great fountain at the apex, with a split canyon at the center of the new wall of buildings at the eastern end, **1**. But unfortunately the buildings on one side of the split have neither mass nor surface relationship to those on the other. In so frankly symmetrical a plan, even when cut by a diagonal road, some three-dimensional balance is expected. It does not have to be a symmetrical balance, but there must be a strong lineal and mass relationship. And I do not suggest a repeat pattern of earlier buildings, but I do recommend in such case a set of core rules for design-rules which would apply to all buildings in a redevelopment plan irrespective of the number of architects stamping their identity and taste on the individual buildings. Such core rules would apply to all types of buildings.

### core rules for large-scale design

There is no substitute for real design study and criticism. In the architectural schools, we are trained to concentrate on self-criticism and to accept criticism from fellow students and our instructors, called "critics." While the results are not necessarily great works of art, they have benefited by the evaluation and talents of both amateurs and specialists, and the results, as far as they go, are those derived from considered judgments.

In architectural practice many offices follow somewhat the school pattern. But where there are few known principles of design or methods of studying, the end result lacks luster. In large-scale group design, two-dimensional elevations mean practically nothing. They are good only for final building purposes. The standard front-and-back concept no longer exists. Buildings are seen in all dimensions and amongst each other in space and time. Group design is truly fourth dimensional as it involves movement in time through, between, and around. It involves movement at different speeds on foot and by auto. It involves views from many windows from many sides—changes in play of light and shade and the challenges of depth and height. There is no design problem more exciting, or more difficult, or more rewarding when successful. It is one ultimate in architectural design both in refinement, subtlety, grandeur, and beauty. Remember the Piazzo San Marco? The Alhambra? Pekin? Paris?

The use of study models for large-scale design is, of course, essential. Many of the illustrations here were made from them. But study by the use of models is different from simply making a miniature of the final design. Study models must be just that—subject to smashing with the fist, to easy plastic change as studies progress. The air-eye view is our self-deception because only seldom do we make models large enough to permit us to wander mentally in and around our structures. Here photography is some help. And a sculptor may come in handy.

There are many core elements in large-scale group design. The most precious is *space*. Space is the converse of mass and has infinite limits. It is not to be violated because its very plasticity becomes walled in, shadowed, murky. Space harbors light, and light, another element in design, must penetrate to the substance of structure and at the same time permeate and penetrate every surface, the ground, all walls, and the tops and terraces of buildings. Contemporary architecture often calls for roof use, hanging gardens which become part of the total space design. The St. Louis Plaza Redevelopment Project uses such hanging gardens on top of two to three stories of commercial structures with high-rise residential slabs rising lightly above, **2** and **3**. Open to the light of the south, this upper level becomes a part of the total space provided by the Civic Center. It is an exciting idea and well conceived.

The best-known core elements of space design are *symmetry* and *asymmetry*. Symmetry implies central organization and equal balance. It is the simplest concept on paper but all the more dangerous for that reason. Place Vendôme, as a highly developed hollow square, uses symmetry with great success. Both the approaches and the interior spaces are provided with designed order framing a dramatic central feature. With or without such a feature, symmetrical axial treatments lend themselves to exacting space relationships of height of building to widths and depths of space, to topography and orientation. The *Area C* (Zeckendorf) Renewal Plan for Washington incorporates several symmetrical and axial features of considerable size in a total asymmetrical plan, **11**. Such treatment is always formal and ordered, and in this case was ably handled as a part of the dignity required of this portion of the Capital. Here, however, it does not create the variety of excitement that the multi-axial, multi-vistaed Place de la Concorde in Paris achieves through the combination of both symmetry and asymmetry in vast spatial compositions. Considering the mobility provided by high-speed highways, the architectural design of such a project, large as it is, is challenged by time distances and the dramatic possibilities of spatial surprise.

A new spatial-design vernacular was developed in Germany and Holland in the early 1920s by Ernst May, Bruno Taut, Gropius, and Mies. Corbusier's schematic cities were partially responsible but in these countries in particular, the credit goes to the men who built. Siemenstadt, outside of Berlin, and Romerstadt, outside of Frankfurt, are the classic examples and they remain among the best of what may be termed a new invention in space styling. Here similar structures were arranged in sequences, rhythms, and alternating linear patterns over vast areas. While uniform height was a major element, studied emphasis by an occasional carefully located high-

rise or series of high-rise buildings added planted horizon notes to the time sequences. The architectural impact of rhythms in distance sequence became a major design element of planned distribution from one end of an area to another, without front or back, and often without beginning, end, or center. Impressive, sometimes monotonous, often beautiful in their simplicity, these extraordinary developments profoundly influenced American public housing from the 1930s and now redevelopment. In Henry Churchill's proposed Eastwick redevelopment "new town" for Philadelphia, the Philadelphia row house has been made to serve in this rhythm and sequence design. A banal building type in the worst of America's conformist traditions could become fine architecture.

Several redevelopment projects illustrated here are design descendants of this European tradition. Lake Meadows in Chicago, while higher and perhaps emptier than most, is in direct line. So are several of the New York, Philadelphia, and Chicago projects.

There are several serious problems connected with the indiscriminate use of this design form. First it is too deceptively easy—it can be done mechanically by any draftsman with the usual tools, with inexpensive but dreadful results. Second, if without center or termini, it becomes neither a substantive form nor an integrated neighborhood. Then if all the parallel rows are open ended, from within one looks in one point perspective either into emptiness or the slum across the street. In other words, rhythms, sequences, and repetitions, alternating patterns and other core elements in design must be part of a total community form —otherwise they are mere fragments of design.

A core design may make use of many historical precedents or start one of its own. No two redevelopment sites are the same, no two programs are the same, and no two solutions will resemble each other.

I feel that we have the right to be encouraged, that important city rebuilding has started and that in a few years we will see the city of man as it should be, a fine place in which to live and work and a beautiful place besides. In the meantime there are years of hard work ahead and no little part of this work will be to learn to design commensurately with the scale of the opportunity. The projects illustrated here are the earliest in what will be a long line. They constitute a selection of a small percentage of available designs, chosen because they contain ideas and because they will form for the future the basis of further experiment. My judgment in such selection is as personal as yours must be.

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2 Piaget Studio

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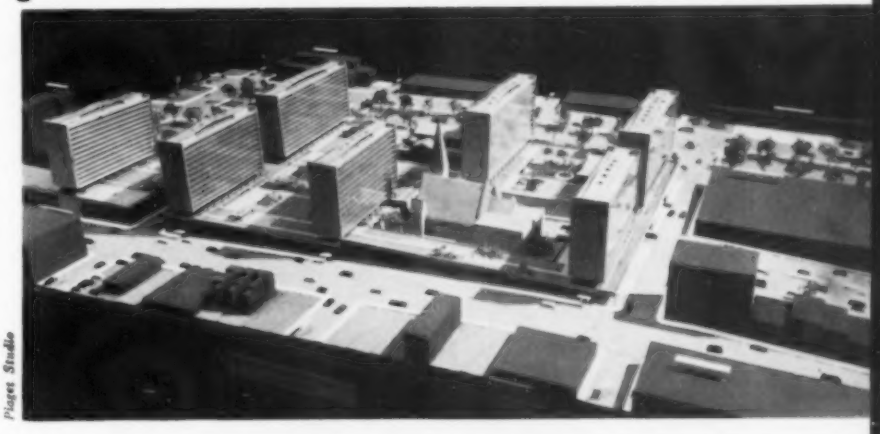

Piaget Studio

For the most part, the illustrations are chosen from completed projects or ones under construction, under loan and grant contract, or likely to be built in some semblance of the present plans, based on existing information. Included are a few which apparently are a long way off, but which are attempts at large design.

Lake Meadows, the New York Life

## The Architecture of Redevelopment in U.S.A.

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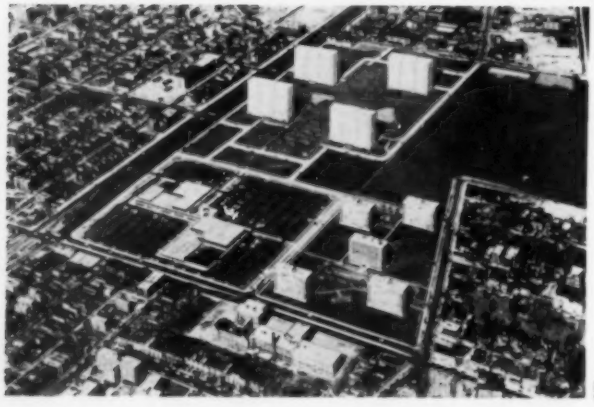

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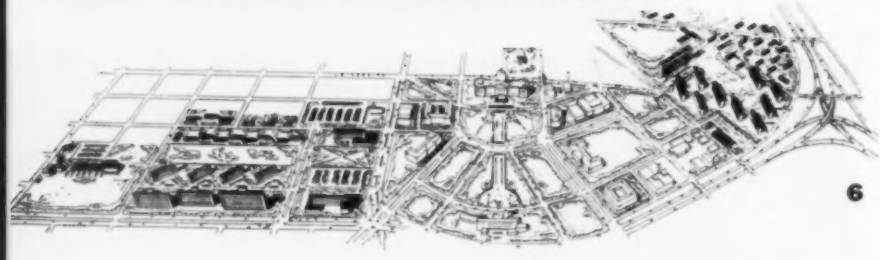

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Insurance Company Project in Chicago, was the first of the dramatic Federally aided projects to be approved and it is now well along, with a shopping center and five large apartments occupied. This was one of several sizable schemes begun prior to the passing of the Housing Act of 1949, but of all of them, the most interesting and spectacular. Here there is no skimping of open space, and an excellent crispness of design adds an emphatic note to a flat and dreary cityscape, **4** and **5**. Originally two great slab buildings formed the center of the scheme. These have been abandoned for less dramatic buildings, but on the whole the scheme retains freshness and above all, spaciousness.

The St. Paul scheme, **6**, which has changed little since 1950, is in the clearance stage. The site flanking Cass Gilbert's Capitol, is high, flat on the west, steep on the east. Here the proposal is for slab high-rise and row houses with fine school sites and shopping centers and office buildings. May the architects for the developers, whoever they may be, take full advantage of the opportunity!

Another early redevelopment project is that of Nashville. Here a noisome slum surrounding Strickland's beautiful State Capitol (completed in 1855) on the top of Cedar Knob has been removed to provide a handsome hillside park setting for the building, a loop super-highway, and sites for commercial and public buildings, **7**. Unfortunately, recent state office buildings and a state library completely fail to take advantage of the site or the redevelopment plan by Clarke & Rapuano and do irreparable damage to an imaginative scheme. It is still a magnificent endeavor.

Sacramento engaged Neutra & Alexander in 1950 to provide a scheme for the large blighted area from the Capitol to the Sacramento River—the oldest part of the city. The preliminary scheme, which was a highly original and exciting one *(January 1955 P/A)*, has since been revised several times, by the Sacramento Redevelopment Agency, although major elements remain, **8**. It is one of the best examples so far of large-scale planning for a large blighted area to be redeveloped by stages and in a wide variety of uses. Many perspective sketch studies were made of various building types and variety of design was achieved without loss of cohesive quality.

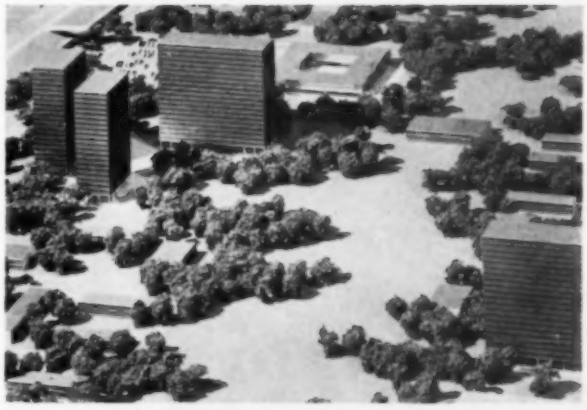
The story of the Gratiot Plan in Detroit is too long and curious for discussion here. Schemes for the redevelopment of this former slum area were in the making by the City Planning Commission in 1948. Several new plans were made during 1950 and 1951, and the slum was finally cleared without a final plan having been adopted. An excellent scheme (given P/A's most recent First Design Award) was prepared by Yamasaki, Stonorov, and Gruen, in 1955; but the latest, **9** and **10**, by Mies van der Rohe, is a totally new departure and one of the most exciting large-scale designs of this era. Here large and small buildings are carefully grouped along an irregular mall. The spare rigidity of Mies' architecture is softened by the massing, the space flow, and the landscaping, yet constitutes an extraordinarily vital design. The end result is both romantic and formal, without the use of the clichés of previous work. This may well be a next step toward a new civic art.

In Washington, D. C., the Southwest Area has also gone through many redevelopment planning stages from sketch plans published by the National Capitol Planning Commission in 1950 to the one presented here. A turning point came in 1952 with the publication of the imaginative Justement & Smith plan, which broke the ice of classicism and presented a large-scale plan commensurate in design quality with the Neutra & Alexander scheme for Sacramento. Many plans and debates on plans for the Southwest Area followed. The area was broken into several parts; *Area B*, one section, is now being redesigned by Clothiel Smith and Arthur Keyes; while *Area C*, which forms the larger and more spectacular element, is known as the Zeckendorf Plan, with I. M. Pei and Harry Weese as designers. *Area C*, with its great mall leading to the redesigned marina, with L'Enfant Plaza, a large shopping square, and other large-scale elements, promises to be urban redevelopment's most varied and possibly its most unusual design to date, **11**. The site is complex, the requirements for reuse infinite, but the scheme has a quiet order within a dramatic interpretation well worth noting.

Recent plans in Chicago are for several new projects. Along East 55th Street on the South Side, just north of the University, as part of the Hyde Park-Kenwood redevelopment scheme, Harry

8

9 Hedrich Blessing



Hedrich Blessing

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Rendering: Schwartz

11

## The Architecture of Redevelopment in U.S.A.

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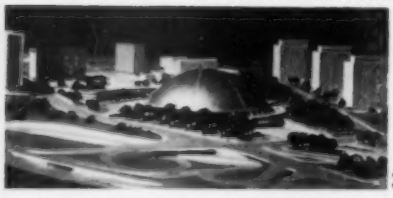
Newman-Schmidt Studios



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Weese has designed a large, linear shopping facility combined with high-rise and row apartments, new schools, and playgrounds, **12**. This project carves out scattered slums from an otherwise sound area and is intended to act as a stabilizer for neighborhood conservation. On the north side of the city a fantastic scheme, which has gone through several metamorphoses, known as the Fort Dearborn Project, by Skidmore, Owings & Merrill, does little as yet for redevelopment design. It merely perpetuates the surrounding existing cityscape, letting light and air to the ground, **13**. One hopes for more study before this reaches execution stage.

In Pittsburgh, the Lower Hill Redevelopment Project by Mitchell & Ritchey outdramatizes all the others, dramatic as they may be. The focal point is the retractable dome of a great civic arena backed by a terraced cultural center and flanked by a series of high-rise slab apartments marching up the hill, **14**. The Arena *(January 1951 P/A)* seems a very real likelihood and the remainder of the project appears to be proceeding at a good pace. Since Pittsburgh always builds its dreams, this scheme from outer space may become a reality in our lifetime.

The two large redevelopment projects in San Francisco merit praise. The Western Addition Project is similar in character and purpose to the Hyde Park-Kenwood Project mentioned above. But the Diamond Heights Project is really a new hill town, **15**. Vernon DeMars in an extraordinarily sympathetic scheme has designed on the steepest possible terrain (even for San Francisco) as delightful and informal a community as is to be found in the annals of contemporary town design. May he be permitted to carry it through to its completion!

On the other coast, within Philadelphia, a city of many redevelopment experiments, the Eastwick New Town is in advanced planning by Henry Churchill and with the City Planning Commission. Some 2100 acres of swamp and a decayed community are to be converted into a lively town with a large central shopping center and high school with four major complete neighborhoods attached, **16**. Planned industrial parks flank the new town on the east and north. It is an open plan, fresh, simple, and direct, with all possible built-in amenities.

The North Triangle Project in Philadelphia, designed by John H. Graham & Associates and Milton Schwartz, a non-Federal-aid job, is a large and handsome high-rise group on a fine site, formerly partially occupied by slums, with Fairmount Parkway on one side and the Schuylkill on the other, **17**. Here again we find the universal slab, which in time may weary us, although it appears to be well designed here.

The city planning directors of both Philadelphia and Baltimore, Edmund Bacon and Arthur McVoy, respectively, are both partial to the use of redevelopment to create small squares and intimate linear pedestrian ways, **18** (Baltimore). Several charming schemes are resulting from this idea, which is at the opposite end of the scale from the projects briefed above. In fact, this very variety of redevelopment concepts is its most healthy aspect.

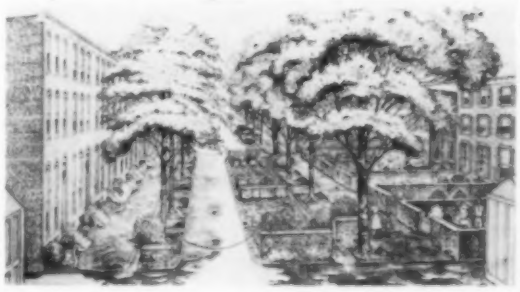
In New York, redevelopment takes many forms, from the Coliseum on Columbus Circle to co-operative housing at Corlear's Hook and on Morningside Heights, **19**. The peculiar nature of land values, densities, and building habits in New York seem to stamp all the residential designs with a deadly, towering, red brick uniformity that is overwhelming. So far no project really stands out among the towers, although many are orderly and let in light all the way to the ground, a relatively new phenomenon outside of Central Park. But New York is New York and it infects areas for a radius of many miles, where imitations of the New York solutions seem to be appearing.

In New Haven, the Oak Street Connector is one of many redevelopment projects which form units in a wholesale rebuilding concept which is now fermenting the city, **20**. No place in New England seems to possess a vitality for rebuilding as great as that of New Haven. A series of fiery comprehensive plans from Maurice Rotival and an active city government are shifting highways, markets, and business areas. New Haven has more planning gumption than most cities twice its size.

Redevelopment design is a new challenge and stimulus. Much not mentioned here is unbelievably bad but many not shown are as good as those that are. And in many places objectives are still so confused that no rational planning is possible.

*Cortland V. D. Hubbard*

17



*Blakelee Lane*

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19

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# Post-War Rebuilding in Western Europe:

by Leo Grebler*

In the rebuilding of Europe's cities, architects have been confronted with opportunities uncommon at least for the contemporary practitioner, for there was much more involved than designing individual buildings or even suburban "projects." City reconstruction called for designing large building ensembles or entire urban areas and sometimes virtually new towns. Design on so large a scale was required in scores of communities in every one of the countries that suffered major war destruction. The dimensions of the task were similar to those of the largest of our own redevelopment projects and were often many times greater. Certainly, the number of areas that had to be rebuilt far exceeded the total of all the redevelopment programs undertaken thus far in the United States. And while the accent here has been on residential redevelopment, the rebuilding of European cities involved many business centers.

Few architects were equipped by their pre-war experience to deal with design problems on such a scale. Here was perhaps the greatest challenge to civic design in our generation. How has it been met? How has the design process itself been adapted to the unusual task? What kind of architecture has emerged?

No over-all answer to these questions can encompass the rich variety in European reconstruction. Organizational arrangements for city rebuilding vary between a strict design hierarchy in France, a more or less severely controlled architecture in some English and Dutch cities, and a prevailing attitude of "business as usual" in Germany and Italy. The style of reconstruction architecture in each of the five countries ranges from traditional to progressive, and within this range there are all shades of quality from the mediocre to the excellent, at least in the eyes of this observer. In spite of the great variations in architecture from city to city in each country, there is evidence, nevertheless, of the persistent strength of national traditions. One might say that even contemporary, progressive architecture, which has so many aspects of a movement cutting across national boundaries, reflects deep-seated national characteristics. In other words, each country shows a different interpretation of what is considered to be modern architecture.

The sharp differences in design from country to country and from city to city are not only a result of the usual variances in attitudes toward traditional or advanced architecture. They are also due to the fact that the challenge itself of civic design has been met with various degrees of response. In some cases the opportunity presented by the challenge was not even recognized; in others it was recognized but only faintly utilized; but in still other instances, the challenge was fully met.

## France: persistence of formalism

In terms of organization, the French were the best prepared for adjusting the process of design to the scale of city rebuilding. True to her centralist tradition, France has used a design hierarchy parallel to the administrative hierarchy for city reconstruction. A chief architect for each war-damaged city, appointed by the Ministry of Housing and Reconstruction, is at the top of the organization pyramid. He usually picks up where the chief urbanist, also appointed by the Ministry, leaves off; that is, he gives physical contours to the general reconstruction plan that determines the street layout, land use zones, and building volume.

**Le Havre.** *Large buildings of reinforced concrete give the new center a modern but somewhat bleak appearance.*

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The chief architect's task concerns the detailed distribution of the building mass, the over-all style and general design of façades, and the selection of exterior materials. He furnishes the architectural conception in rough sketches and, most important, designates the block architects who, guided by his general proposals, develop the detail for each block. Individual buildings are designed by architects selected by the owners, but these architects are more or less bound by the general treatment prescribed in the chief and block architects' work. Opportunities for significant exterior variations are usually quite limited.

As a result of the hierarchic organization of design, the rebuilt French city tends to show more consistency in style and greater uniformity in exterior materials than can be found in almost any city in any of the other countries. No modern deviation mars the deliberate restoration of Orléans in the 18th Century style, with its mansards and cornices and all the rest. Auguste Perret's preference for the natural color of concrete has left its mark on Le Havre's main reconstruction area; only recently, since his death, have exceptions to the dust-gray texture of concrete enriched the physical appearance of the area. The urge for consistency has sometimes produced monotony. While Le Havre and Orléans, each in its own way, at least show sharply differentiated profiles, there is a lack of local color in other places. Acid critics have observed that some kind of MLR or MRU style is visible in too many of the rebuilt cities (derived from the capital letters of the Ministry, the name of which has changed over time). This uniformity has not evolved from employing salaried architects working in the Ministry. It is rather the result of the Ministry's choice of private architects to fill the top positions.

Generally, reconstruction shows strong traces of the traditional French formalism and a strange absence of the qualities of charm and intimacy. Le Havre, perhaps the outstanding example of civic design in French reconstruction, has grandeur and avoids monotony by variation in the height of buildings, but its neoclassicism in modern disguise lacks warmth.

Maubeuge's new center of shops and apartment houses shows a more successful break with formalism, but it suffers from too much repetition of identical types of buildings.

Abbeville is perhaps the most impressive instance of a break with formalism and of the successful combination of unified design and variety. The unusual planning features—open planning, curved streets, the trapezoidal form of the main plaza, and the use of "bridge buildings" over streets—are matched by the remarkable over-all design by M. Lafon, the chief architect. Identical exterior materials are used for groups of buildings rather than the entire reconstruction area. A standardized window design is camouflaged by varied exterior treatments. Thus, each building ensemble gives a strong impression of unity, yet there is sufficient differentiation to avoid boredom. The harsh demands of economy are met, but the struggle with financial stringency is more effectively resolved than in other places.

Rouen's rebuilt center is quite undistinguished architecturally. However, the projected development of a government and residential district on the left bank of the Seine promises major architectural as well as planning innovations.

The traditional reconstruction of Orléans and Saint-Malo, as well as of other cities, has often raised costs unnecessarily.

Thus, organization for unified design in France has had mixed results. A high degree of architectural consistency in each city has been accomplished at the price of excessive uniformity and a lack of color.

**Saint-Malo** (left). *This small town, almost completely destroyed, was rebuilt in a severe and costly traditional style.*
**Abbeville** (above). *One of the "bridge buildings" enclosing Place Courbet, the main plaza, which was designed in a trapezoidal shape.*

## England: controlled design

English cities exercise architectural controls not only through their strong public powers but also as the owners of the land in all major reconstruction areas. When they lease parcels for private development, they act as landlords who can impose architectural as well as other conditions on builders. Thus, the opportunities for civic design are great in theory. In practice, the opportunities have been used in varying degree.

Plymouth has perhaps gone farthest in the exercise of formal rigid controls not only regarding planning features, such as the use and height of buildings, but also with respect to architectural treatment, the choice of exterior materials, window sizes, and so forth. Portland stone, for example, is prescribed as facing material on principal shopping streets. Indeed, Plymouth's new center betrays a considerable degree of regimentation. It is grandiose but cold and uninteresting; its architecture is streamlined but heavy, and it lacks originality, graciousness, and variety.

Nowhere, outside of London, has the role of design in reconstruction been as fully grasped as in Coventry. Here is one of the few English cities where an architect-planner rather than the city engineer has been in charge of reconstruction, and Donald Gibson, the City Architect and Planning Officer, has made the most of his opportunity. He has himself designed Broadgate House which serves as a focal point for the city center. It was the first structure to be built in the area; and with its clock tower, imaginative landscaping, open terrace, and use of the Lady Godiva theme for ornamentation has set a high standard for later projects. Coventry's center is typical of a certain playfulness which is beginning to enrich contemporary English architecture. The exterior materials used in buildings in Coventry vary, although brick predominates. Uniformity in the height of structures has been avoided. There is an impression of homogeneity in the midst of variety. Coventry, incidentally, is one of the few places in which a bombed cathedral is left in ruins as a memento of the follies of war. A new, highly modern cathedral (the object of much controversy) is to be built on an adjoining site.

**Plymouth** (left). *Buildings along Armada Way show the somewhat frigid and regimented architecture of the center. Note patterning of sidewalks.*
**Coventry** (below left). *Broadgate, the new center, has a spacious plaza. Broadgate House (in center), a "bridge building," has motor traffic passing beneath and special tunnels for pedestrians. Detail* (below) *shows open terrace overlooking the plaza.*

Exeter's rebuilt shopping area shows a conservative tendency befitting to this town's tradition as an ecclesiastical and university center. The architecture, Georgian gone Swedish, is straightforward and pleasing though not exciting.

Bristol has made comparatively little use of its opportunity to create a new civic design, and its shopping center already has a look of yesteryear. The same is true of most of the office buildings so far completed in the City of London. More daring designs are in the offing, however, and reconstruction in the financial heart of London is still so incomplete that parts of the area may yet acquire a new face.

Elsewhere in London, however, there is much to be seen that is forward-looking and worth while. Lansbury has received universal acclaim for the excellence of its design, for the warmth of its architecture, and for the attention given to detail in its architectural as well as its planning features. These same qualities prevailed in the rebuilding of other subsections of the Stepney-Poplar area.

The Pimlico and Paddington reconstruction areas in London compare well with the best of our own residential redevelopment projects. Pimlico, with its glass enclosed, cylindrical heating tower, and its mixture of high-rise and low-rise apartment buildings, has become a modern landmark along the Thames. The stark contrast with the surrounding area of small, three-story houses proclaims progress. The architecture is a bit rigid, though, the treatment of concrete is a little heavy, the layout is too rectangular, and the open spaces in the access galleries tend to become dirty in the London climate.

Much of the English reconstruction architecture is austere and undistinguished. Controls have sometimes produced a design representing the lowest common denominator to be found among the sponsors, the architects, the planners in charge, and the city councils. Yet, one observes with pleasure a "loosening up" in many places, a new zest for ornamentation, an effort to throw off reserve and restraint—all in line with the remarkable general renaissance of the arts in England.

**London** (both views above). *Two sections of the Lansbury Neighborhood, an area noted for its high quality of design.*
**London** (right). *Pimlico project, a residential development, has open-planning style with mixed-building types.*

# Holland: planning versus design

In Holland, the design of reconstruction areas is controlled in much the same way as in England. The architectural controls exercised by the cities vary in strength and in objective. Rotterdam, in its early phase of rebuilding, tried one-man rule, which was so dominant in France, and appointed architectural supervisors for sub-areas. But this system was quickly given up in favor of architectural committees that were set up to review individual designs.

The planning elements for reconstruction areas are determined in such detail by some of the city planning departments that there is often little leeway left for imaginative designers; and every change in the plan requires a cumbersome process of review. It is never easy to draw the demarcation line between planning and design. The line becomes quite blurred when the planning functions are extended as much as they were in the reconstruction of several Dutch (as well as English) cities. When city planners do more than establish general rules, they begin to encroach upon the fields of the designer and the architect. Here is a problem that is well worth the study of practitioners in both fields.

Architectural controls were handled gingerly in Rotterdam, and here, the visual impression is one of liveliness and vitality that befits this commercial center less steeped in tradition than many other European cities. The new Rotterdam is one of the most American-looking cities of Europe, not only because it is new but also because it has a degree of exuberance and informality. The Lijnbaan pedestrian shopping area is notable not only for its planning features but also as an example of modern, yet simple and unobtrusive, architecture and excellent store design. A visual focus, however, would greatly add to the attractiveness of Rotterdam's main reconstruction area.

In The Hague, the major rebuilding project executed to date is in the Sportlaan-Scheveningen area, an area that had been demolished by the Germans so that they could build their Atlantic seawall. The small pre-war houses, containing a total of 4000 dwelling units, have been replaced by large, modern apartment blocks on both sides of a green belt about 500 ft wide—probably one of the most open residential developments in Europe. But a green strip as wide as this tends to divide rather than integrate and unite. The long, narrow shape of this reconstruction area confronted the designer, W. M. Dudok, with a difficult problem, and the compromises made during the execution of his plan may have distorted the original conception.

The new business center of Nijmegen has for the most part a rather utilitarian look and is without architectural distinction. But the buildings around the new square, Plein 1944, are pleasing in their total impression. One of the most modern and luxurious Dutch buildings of the postwar period stands in the new public-building center of Arnhem, the seat of the provincial government. Arnhem also has one of the most gracious new railroad stations in Europe.

Middelburg, a small town with a proud tradition, was deliberately restored in 18th Century style. The quaint exteriors of the stores belie the modern layout and equipment one finds within. The merchants themselves seem to be doubtful about the sales value of quaintness; many of them have already replaced the small paneled windows with large plateglass windows so they may more effectively display their wares.

In general, reconstruction architecture in Holland is less austere than in England and less regimented than in France. Few projects approximate the high standard of advanced Dutch prewar architecture, but the average design is competent, honest, and pleasant.

**Rotterdam** (above). *Lijnbaan pedestrian shopping plaza has been dubbed "Europe's Fifth Avenue."*
**The Hague** (right). *In the Sportlaan-Scheveningen project a greenbelt 500 ft wide separates this building group from one facing it.*
**Arnhem** (right above). *This gracious railroad station is among the city's best reconstruction projects.*

## Germany: a bewildering case

Because of the strong emphasis on private initiative in German reconstruction, civic design is a rarity. Architectural controls are those of the traditional "Baupflege," that is, the municipal power of vetoing a proposed design because of incompatibility or similar, primarily esthetic, reasons—a power used by different cities to a varying degree and with varying effectiveness.

Yet, there are a few remarkable examples of unified design in the rebuilt areas of German cities, thanks largely to the informal influences of architect-planners in charge of reconstruction and to the opportunities made possible here and there by municipal or other large-scale land ownership. In some places, the average quality of reconstruction architecture is high. It is less formalistic than in France, less utilitarian than in England, and lighter than the "modern" German architecture of yesteryear.

Hanover is perhaps the German city with the most consistently high quality of architecture. When it is completed, the group of office buildings that is being placed at the nodal points of an inner-ring road will be an impressive example of civic design made possible through the subtle guidance of Stadtbaurat Rudolf Hillebrecht and by architectural co-operation rather than the heavy stick of regimentation.

Frankfurt's residential Mainufer project and the reconstruction of the Altstadt are among the exceptional examples of a successful blending of traditional with contemporary architecture. Municipal land ownership has facilitated a unified city design, but great care was taken to avoid monotony. In the new business center, somewhat garish advertising and an overdose of neon lights unfortunately mar the generally fine reconstruction architecture.

Darmstadt provides another illustration of the persistence of local traditions. Its rebuilt center shows strong traces of the Jugendstil which was promoted in this city about 50 years ago. Here, however, one finds good, straightforward, and simple design in office and residential buildings. The ruins of the Stadtkapelle in Darmstadt have been converted into an impressively landscaped monument to the war.

In Hamburg, because the remaining building shells and walls were used so extensively in reconstruction, there is little new architecture to be seen, particularly in the business center. The Binnenalster fortunately has retained its charm, the famous main shopping area of Moenckeberg Strasse and the offices on Ballin Allee appear to be about the same as before the war, and the pioneering residential developments of Fritz Schumacher still show the somewhat severe modernity of the Twenties and early Thirties. New architecture is more often in evidence in some of the outlying reconstruction areas of the city.

In many cities there is much rebuilding "as before" that is often concealed by modernized storefronts and façades. Hohe Strasse, the main downtown shopping street in Cologne, is a less than pleasing example of this type of reconstruction.

On the whole, German reconstruction design leaves the observer bewildered. Nowhere in Western Europe was the opportunity for civic design greater than in the vast destroyed areas of German cities. Yet nowhere does one find so much reinstatement of the old, or so much reconstruction of individual buildings rather than of whole urban areas. Where it has come to fruition, however, civic design is of high quality. Because of the large number of devastated cities, and the absence of national reconstruction policy, the range of solutions to the problems of reconstruction is so great as to defy any generalization.

**Hanover** (below). *The headquarters of the Continental Gummiwerke is one of the office buildings placed on the inner-ring road of this city.* **Frankfurt** (right). *Famous Roemer is in foreground. Three of the five buildings were partly salvaged and faithfully restored; the two others were rebuilt in more adaptive style.*

## Italy: the best and the worst

The most advanced, stunning, and luxurious architecture in Europe is to be found in Italian reconstruction, particularly in Milan. The new Olivetti building, the extension of the Montecatini office complex, and other business as well as residential projects in this skyscraper city, perhaps the most American-looking metropolis on the Continent, are remarkable specimens of modern design.

But Italy's reconstruction architecture at its best is limited to only a few cases and usually to individual buildings. Because much of the war damage in Italian cities was spot damage, there has been little opportunity for civic design. And where the opportunity exists, as in the three major war-damaged areas in Genoa, the projects are still on paper. An emphasis on private initiative, the weak administration of such municipal powers as do exist, and the traditional Italian individualism are roadblocks to the execution of unified design schemes through dictation, persuasion, or co-operation. The art commissions and other agencies concerned with the preservation of Italy's rich historical monuments are powerful instruments for the reinstatement of the status quo.

The reconstruction architecture of Leghorn has a certain sweep and vitality, though it is hardly distinguished. Here, as in some French cities, buildings along a block or a whole street have been given a unified architectural treatment so that a group of structures, each of which is held by different owners, has at least the visual appearance of one building. The rebuilt residential areas of Pisa are dull and fail to reflect this city's rich artistic tradition. Naples' reconstruction plan for the Nuova Via Marittima promises to provide an impressive array of public and private office buildings, but few of them are completed.

The rebuilding of the many small towns and villages that were completely wiped out confronted Italian designers with a unique and significant opportunity, at least in theory. In practice, little has been made of the opportunity. Cassino is a case in point. In view of the emotional overtones involved in this case, because of Cassino's importance for tourism, and because of the interest taken in its reconstruction by the national government, one might have expected to find a better than ordinary architectural treatment for this "martyred city," rebuilt on a new site. But the new architecture is humdrum, unimaginative, and almost shabby.

An even more serious failure in design is to be seen in the rebuilt Ponte Vecchio area in Florence. Competitions were held and prizes awarded, and art authorities such as Bernard Berenson, the venerable expert on the Renaissance, as well as the local press participated in a ferocious debate as to how to rebuild this area. But actual reconstruction proceeded in a haphazard fashion, without regard for the prize-winning designs. As a result, the famous old bridge is overwhelmed by the building mass, of indeterminate architectural style, that borders upon it. Some of the narrow streets near the bridge were widened by three to seven ft, which destroy their previous charm without facilitating the flow of traffic. Several new buildings in the area are so high as to obscure the medieval towers.

## Summary

When the reconstructed areas are compared with the great architectural creations of Europe's past centuries, so many examples of which fortunately still exist, one cannot help being disappointed. There are few examples of truly great architecture or of convincing civic design. Much of the architecture is utilitarian

**Milan** (left *and* right below). *Two apartment houses that are representative of the advanced architecture found in Italian reconstruction.*
**Florence** (below). *Via Por S. Maria, leading to the Ponte Vecchio, is a mediocre solution for one of the most delicate design problems in city rebuilding.*

and even pedestrian, and it betrays financial stringency as well as the need for speed. There is less progressive design than the avant-garde had hoped to see.

But are we justified in setting so high a standard? When we consider Europe's economic limitations and then compare the architecture in its rebuilt cities with the average rather than the best design of past ages, particularly with the work of the 19th and early 20th Centuries, then one can sense that there has been a degree of progress. There are examples of good, straightforward design in every country. Substantial advances have been made in designing more efficient and pleasant interiors.

Final judgment on the role of civic design in European city reconstruction must be deferred until more of the public building groups—many of which, particularly in England and France, are still on the drawing boards—are executed. In the meantime there is perhaps a lesson to be learned from European reconstruction. Where the organizational setup was favorable to it, the execution of a unified design scheme was facilitated but by no means assured. In places where the lack of organization militated against good civic design, as in Germany, one can yet find remarkable achievements. Men rather than organizations create architecture of enduring value.

The story of architecture in European city reconstruction would be incomplete without some reference to the time and talent devoted to the restoration of treasured buildings everywhere. A large amount of resources has gone, and is still going, into this activity, and a high priority has been accorded to it in most countries.

Nowhere has restoration work absorbed so large a proportion of construction resources as in Italy. Montecassino, perhaps the most controversial case of war destruction, is the biggest job of faithful restoration in Europe. Governments have sometimes been criticized for pouring such large amounts of money into the restoration of historical monuments, and it is indeed easy to compute how many badly needed houses poverty-stricken Italy could have built with the funds used for the rehabilitation of churches, palaces, and other public buildings. But as John Hersey showed so movingly in *A Bell For Adano*, people do not live by bread (or good housing) alone. Symbolic values are important in city reconstruction.

Even the Communist leaders of Warsaw, whom one might suspect of holding little respect for tradition, have expended enormous resources on the exact reinstatement of venerated buildings and statues in Marienstadt, the old town, and have given this project priority over many other urban improvements which would have been more directly "useful." In Leningrad, "hundreds of architects and experts spent months in restoring the columns, the minor adornments, the decorations of the ancient regime." [1] These cases, and the restoration of damaged cathedrals in France, of famous town halls in Holland, of the House of Commons, Gray's Inn and many churches in London, and numerous similar efforts in Germany, testify to the strength of tradition, national heritage, and symbolism in the rebuilding of cities, regardless of differences in the political and economic organization of society. And in West European countries where tourism is an important source of income, the restoration of treasured buildings is considered good business as well as a matter of pride and sentiment.

[1] *Michel Gordey*, Visa to Moscow *(New York, 1952), p. 344.*

**Cassino** (below). *The new town, moved from the mountainside to the plains, consists largely of blocks of indifferently designed apartment houses.*
**Milan** (right). *The Olivetti office building, on a bombed site in the city center, is an outstanding example of modern Italian architecture.*

# street lighting in action

by David A. Toenjes* and C. Richard Brewer**

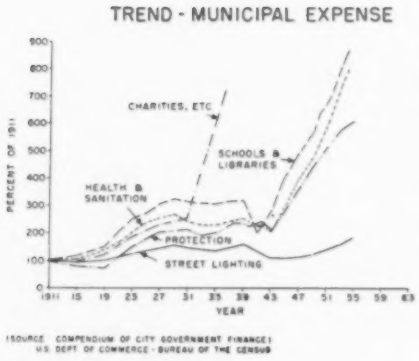


*Figure 1—chart compares cost of street lighting with other municipal expenditures.*
*Chart: U. S. Dept. of Commerce*

*Figure 2—typical post-top street-lighting luminaire of 1927.*

Throughout the United States, overhead street lighting generates an amount of light estimated at 20,000,000,000 lumens, during approximately 4000 night hours each year. This may seem to be an imposing figure, but it is only about one-tenth the amount of direct summer sunlight falling on a single square mile. Five times this present amount of light, however, is needed if all our existing urban streets are to be lighted to *minimum* recommendations.

### standard practice and the ACTION program

Three years ago the American Standards Association approved the current *American Standard Practice for Street and Highway Lighting*. These unified recommendations, worked out in detail by a special committee of the Illuminating Engineering Society, set forth the principles for adequate street lighting. On ordinary urban residential streets, for example, at least 0.2 average ft-c (lumens per sq ft) should be provided. At least 1.2 ft-c is the level recommended for streets with heaviest vehicular and pedestrian traffic. The National Street & Traffic Safety Lighting Bureau estimates that only one mile in 14 of our present urban street mileage is provided with lighting levels meeting these recommendations. This might well be the measure of our apathy to the alarming growth of traffic and street-crime problems in the nation *(Figure 1)*.

Are these recommendations unreasonably high? No, not at all. The illumination figures are advised as the *minimum* needed on the roadway to provide adequate visibility for safe and easy movement of vehicular and pedestrian traffic. These levels are exceeded in many communities today, where the important benefits of good street lighting are fully recognized.

Why, then, is so much of our street lighting far below standard? Why have expenditures for street lighting lagged behind other municipal service expenses?

During World War II, many lighting programs were deferred, of necessity—for lack of equipment and power, and because of coastal dimouts. Since the war, most of these programs have been reactivated, and street lighting in this country has moved forward as never before. Still, there remain many communities in which programs of lighting modernization have been neglected; in others the lighting programs have been limited to certain types of streets, while omitting others. Just as public awareness has been aroused to the need for new schools, highways, and sanitation facilities, so must the public respond to the fact that improved street lighting can save thousands of lives and millions of dollars each year.

While automobile registrations have risen continuously and travel at night has generally increased, street lights installed in the Model-T-Ford era have grown grossly obsolete *(Figure 2)*. Although they were adequate in their day, they have long outlived their usefulness and are completely unsuited to the demands of modern traffic. Many street-lighting systems ride the path of degeneracy similar to the process of area "blight"—the term used by the ACTION program (American Council to Improve Our Neighborhoods). ACTION defines "blight" as "the decay that sets in wherever people neglect their homes or allow


* *Large Lamp Department, General Electric Company, Nela Park, Cleveland, Ohio.*
** *Outdoor Lighting Department, Apparatus Division, General Electric Company, Hendersonville, N. C.*

their neighborhoods to decline." It further explains that many blighted areas result from undirected growth of the commercial part of a city until it imposes its effects on portions that have been completely residential. The effect of obsolete, inadequate street lighting is an accompanying factor—often a contributing factor—in such urban blight.

The remedies also are parallel. ACTION calls for public-spirited citizens to initiate action on urban redevelopment. The broad aspects often indicate that newly defined zones are in order. Commercial, industrial, and residential interests are given deserved opportunity and protection. City councils are urged to plan long-term programs to encourage a healthy growth of each interest. Nothing fulfills all the purposes of these programs better than good street lighting.

### economy with modern optical design

Fortunately, recent advances in street-lighting techniques make possible vastly improved seeing conditions, usually at much less than a proportionate increase in cost. The development of more efficient mercury-vapor and fluorescent light sources makes possible more light production for each watt of power supplied. Contemporary pendent-type luminaires direct more of the generated light toward the roadway, where it should be. Today's designs provide more uniform distribution of light to improve seeing conditions. Engineers have learned more about the basic factors contributing to visibility. These are several of the reasons that new street lighting is a better bargain for civic security now than it was 20 years ago.

Getting the most value for the taxpayer's street-lighting dollar calls for a well balanced lighting budget. Parts of the dollar go into fixtures, controls, circuits, energy, lamps, facilities, and maintenance. In addition, with nearly all the streets deserving light, the budget must be split intelligently to meet the needs of each classification of street.

### how much light, and why?

Quantity of light is chosen according to the traffic pattern of each street. Such traffic includes both vehicles and pedestrians. *American Standard Practice* recommends minimum illumination levels on this basis, as shown *(Table I)*.

The difference between total darkness and broad daylight is infinite. The 0.2—1.2 ft-c levels recommended for street lighting seem far closer to darkness than to the thousands of footcandles that we find under direct sunlight. When an object is brightly lighted it can be seen in *detail*. At the relatively low illumination levels of the Standard Practice, we depend mostly upon seeing by simple *contrast* of the object against its background. Research has shown that objects on lighted pavements usually appear darker than the pavement. About three-fourths of our ability to see for night driving may be attributed to this type of appear-

**TABLE I: Current Recommended Average Horizontal Footcandles[1] (lumens per sq ft)**

| Pedestrian traffic | Vehicular traffic classification | | | |
|---|---|---|---|---|
| | Very light (under 150) | Light (150-500) | Medium (500-1200) | Heavy to heaviest (1200 up) |
| Heavy | [2] | 0.8 | 1.0 | 1.2 |
| Medium | [2] | 0.6 | 0.8 | 1.0 |
| Light or none[3] | 0.2 | 0.4 | 0.6 | 0.8 |

[1] From "American Standard Practice for Street and Highway Lighting."

[2] This condition is unusual, but if it should occur, the footcandle figure appearing in the column to the right may be used.

[3] Lighted highways and expressways at grade should have illumination similar to that on urban streets with comparable traffic flow, either vehicular or pedestrian. An average of 0.6 ft-c is recommended for highways with full control of access as defined by the American Association of State Highway Officials, such as elevated or depressed expressways from which pedestrians are excluded. The values given for very light vehicular traffic pertain to roadways, such as those in residential areas, where vehicular speeds are low, in the order of 15 to 25 mph.

ance, termed *silhouette visibility*. A primary goal of street lighting is to provide uniform pavement brightness against which objects on the street may be seen as silhouettes.

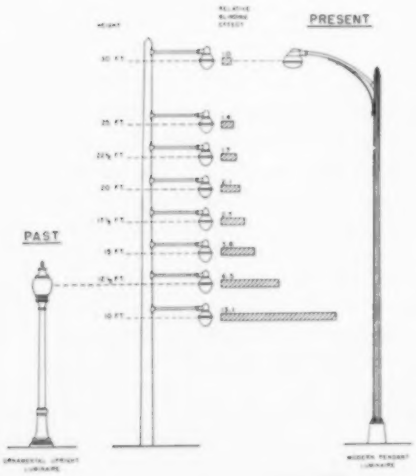


*Figure 3—relative effect of luminaire mounting height upon loss of seeing from blinding effect of glare, with same candlepower at all mounting heights.*

Glare reduces visibility and causes eye discomfort. Modern design of street lighting provides good pavement brightness characteristics, with as little glare as possible. Luminaires should be mounted at sufficient height *(Figure 3)* to be well above the line-of-sight of the motorist. Modern luminaire design suppresses glare by limiting the candlepower beam above given angles as advised by the Standard Practice. Other factors such as low-brightness luminaires and increased brightness of surroundings aid in reducing glare.

### types of streets to be lighted

Nearly all urban streets can be sorted into four major classifications. Residential streets, with light vehicular and pedestrian traffic, include the greatest street mileage. The through streets, carrying mostly local traffic between residential and business areas, represent the medium traffic classification. Arterial streets are the main thoroughfares, traveled heavily by local and through traffic; these constitute the third important group. Finally, the downtown streets in the big-store retail districts are classed as main business streets.

### residential streets

Where a street-lighting modernization program has been developed, it has usually concentrated upon lighting important high-traffic arteries and business streets. These are the areas of most traffic accidents, but similar attention is now needed on the residential streets. Today's boom in home building makes this need all the more urgent. Over a million new housing units and 10,000 miles of new residential streets are added every year, and the end of this boom is still not in sight. In addition to the expanding growth in new communities, urban-residential redevelopment makes its claim also for adequate lighting of this type.

Good residential street lighting stimulates pride in personal property and is perhaps one of the most easily achieved outward indications of a progressive community.

Such lighting is needed to protect pedestrians against assault and residents against prowlers. It provides convenience and safety both for pedestrians and motorists.

For the city or the electric utility, installation of such a lighting system is usually considerably simpler than on a downtown street because of longer spacings, the frequent use of wood poles, and easier installation of poles and electrical supply. Also, the utility or the municipal government makes more friends within a community by installation of an up-to-date lighting system, than by most other means. It is a tangible type of service of which the public is most aware.

Residential street lighting *(Figures 4 and 5)* is accomplished with the smaller lamp sizes. Usually these are incandescent lamps, in new luminaires that give precise optical control and distribute the light so that fewer poles on relatively long spacings may be used. Some use is also being made of the new small sizes

*Figure 4—residential street in Norwalk, Conn., with filament lamps; 2500 lumens, 22-ft mounting height, 110-ft spacing.*

*Figure 5—residential street in Cleveland, Ohio, with filament lamps; 4000 lumens, 25-ft mounting height, 195-ft spacing, average initial illumination 0.25 ft-c.*

of mercury-vapor lamps, with high efficiency and long useful life making up for their greater lamp cost.

### medium-traffic streets

Automobile traffic on these streets is heavier than on residential streets, so that traffic safety becomes more important. Pedestrians need protection against traffic as well as criminal actions. This street classification includes those passing through some commercial neighborhoods, so that the street lighting takes on the added responsibility of lighting to reduce break-ins, theft, and vandalism.

The low-cost group housing that is a part of urban redevelopment often includes medium-traffic streets. In such older, more thickly settled portions of the city, vandalism, street fights, and crime have often been a special problem. In many cases, this problem has been sharply reduced simply by changing from a dimly lighted to a well lighted area.

Mercury (*Figure 6*) or medium-size incandescent lamps (*Figure 7*) are generally used for these installations. The new technique of fluorescent lighting is also applicable (*Figure 8*) particularly where there are many pedestrians or where an attractive appearance is sought.

*Figure 6—medium-traffic street in Malden, Mass., with mercury lamps; 15,000 lumens, 28-ft mounting height, 110-ft spacing. Luminaires located to reduce shadows from heavy tree foliage.*

*Figure 7—medium-traffic street in Cleveland, Ohio, with filament lamps; 10,000 lumens, 25-ft mounting height, 85-ft spacing. Average maintained illumination 1.1 ft-c.*

*Figure 8—medium-traffic street (private industrial roadway) in East Cleveland, Ohio, with four fluorescent lamps (21,000 total lumens) per luminaire; 25-ft mounting height, 100-ft spacing, 1.0 ft-c average maintained. Wet street shows large area patterns of reflected brightness on pavement.*

### arterial streets

Here we have far more vehicular traffic than pedestrians, and traffic safety is the chief objective. Arterial streets are often used to guide strangers through a city, as well as to take motorists conveniently from one portion of the city to another. Hence the lighting installation is one part of the over-all design of the thoroughfare to carry a fairly heavy traffic flow with the greatest speed and the fewest interruptions consistent with safety.

Traffic accidents are more concentrated on these streets, for greater hazards are produced by the combination of faster traffic flow, heavy traffic density, and unfamiliarity of out-of-town motorists. These hazards make it especially necessary to provide good seeing conditions at night, so the lighting is usually done by high-output lamps in up-to-date luminaires. These may be the large mercury

lamps, incandescent, or the high-output fluorescent lamps[1] and fixtures designed for such street lighting (*Figures 9-11*).

### business streets

On these streets, one again must provide for pedestrians, but in far greater volume, particularly during evening shopping hours. Also, a main business district carries a high volume of vehicular traffic, with automobile, bus, taxi, and truck traffic all included. Safety for both pedestrians and vehicles is an important part of the lighting problem, but here the street-lighting installation serves many other functions. It promotes business, adds to civic pride, enhances real-estate values, and serves as a community show window. The amount of light needed is usually at the top level of the Standard Practice recommendation — 1.2 average ft-c or more. Many installations, based on these other features in addition to traffic safety, provide an average of 5 ft-c or more. Since the lamps provide greater light output, the luminaires are usually mounted higher above the street, at mounting heights of 30 to 35 ft.

For these high-traffic business streets, the lighting installation may use any of the three modern light sources—filament, mercury, or fluorescent lamps—and do an effective job (*Figures 12-15*). With the trend toward high illumination levels in business districts, particularly when above the 1.2-footcandle minimum recommendation, the high-efficiency mercury and fluorescent lamp types usually prove to be the most economical because of the increased saving in energy cost.

[1] *"Power-groove" fluorescent lamps, recently announced by General Electric Company, double light output of present tubes of equal length.* B. H. H.

*Figure 9—arterial street intersection and overpass in Charlotte, N. C., with mercury lamps; 21,000 lumens. Twin luminaire mounting on pole in foreground.*

*Figure 10—arterial street in San Jose, Calif., with filament lamps; 10,000 lumens, 28-ft mounting height, 140-ft spacing between pairs of opposite units.*

*Figure 11—arterial divided roadway just beyond shopping center in Oakwood, Ohio, with four fluorescent lamps (21,000 total lumens) per luminaire; 30-ft mounting height, twin-mounted at 95-ft spacing. Average initial illumination 1.7 ft-c.*

### quality of light

Particularly on the high-traffic business streets just described, quality in the lighting system also becomes an important consideration. This matter of quality is difficult to measure, but two of its important factors are seeing comfort and color of light.

Under the topic of color there are really four different light sources to consider, for the color effect of mercury-vapor lamps can be improved by the use of a phosphor coating on the bulb to supply a red color component that the mercury lamp ordinarily lacks, thus helping to give a better balanced color of light. The various lamps' color appearances are the familiar yellow-white for incandescent lamp, light greenish-blue for mercury, blue-white for color-improved mercury, and white for fluorescent.

However, color rendition is another matter, for the appearance of colored objects under the light cannot always be predicted by the apparent color of the light source itself. The color rendition of the incandescent lamp is excellent, although it lacks a little of the blue and green to bring out trees and foliage to best advantage in a landscaped area. Next best is the "standard-cool-white" fluorescent color—not quite as well balanced throughout the color spectrum as the incandescent, although the fluorescent does have enough additional blue color to enhance the green appearance of foliage. At the bottom of the list is the light from the clear mercury lamp, almost completely lacking in red color, so that complexion appearance of pedestrians is quite unflattering. The color rendition of the color-improved mercury lamp is somewhat better in this respect, although it still falls short of both fluorescent and incandescent light.

In the matter of seeing comfort, fluorescent street lighting has a strong advan-

tage. This generally compensates for the fact that its cost, even for a well lighted business street, is generally higher than for a mercury-lamp installation and about the same as for an incandescent-lamp installation of equal foot-candles.

The basic distinctiveness of a fluorescent-lamp street-lighting luminaire, that affects seeing comfort, is in its size and shape. The fluorescent luminaire must be several times greater in length in order to accommodate the longer fluorescent lamp. Therefore, this long, large-area fixture has a lower brightness toward the motorist's eyes, for the same amount of total light output. This physical necessity is turned to advantage in its application to street lighting.

First of all, visibility on wet streets is better with this large-area luminaire, because the pavement reflection pattern toward the motorist's eyes shows broad paths of reflected brightness *(Figure 8)* rather than the narrow dazzling streaks that are typical under smaller, more concentrated mercury- or incandescent-lamp fixtures.

Also, seeing comfort depends largely upon the brightness of the light source itself in the field of view, and this brightness is less with the large-area fluorescent luminaire. Discomfort glare doesn't result in immediate loss of seeing, but it does lead to an accumulative fatigue for the motorist as he continues to drive at night against automobile headlights, flashing signs, and uncomfortable street lighting. Increased comfort, then, is a real advantage for the large, low-brightness luminaires.

### a planned lighting system

The science of street lighting continues to change and grow, with improvements in light sources, optical design, and installation appearance. Street lighting is gaining recognition as an important feature of community planning, either with suburban expansion or with urban redevelopment. We include interior lighting with design for the factory or commercial building—and now, more and more, the home. Likewise street lighting, along with the gas, water, and other utilities, can be designed as an integral part of the whole community. With the technical help of quaified street-lighting engineers, this outdoor lighting system can be made flexible for later expansion or improvement, and can be engineered to the specific traffic needs of the street, fitting in with other overhead and underground utilities. So planned, a street-lighting system can perform all these functions and be an asset from an esthetic point of view. It can stand as a landmark of a progressive community.

*Figure 12—business street in Ottawa, Kans., with filament lamps; 15,000 lumens, 30-ft mounting height, varied spacing and street width.*

*Figure 13—business street intersection in Beloit, Wis., with mercury lamps: 15,000 lumens, 30-ft mounting height, varied spacing and street width.*

*Figure 14—small-town business street in Redwood Falls, Minn., with four fluorescent lamps (21,000 total lumens) per luminaire.*

*Figure 15—high-traffic business street in Dallas, Tex., with four fluorescent lamps (21,000 total lumens) per luminaire; 30-ft mounting height, 70-ft spacing.*

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by Ben John Small

# spec small talk

### Joe speaks

My structural friend, Joseph L. Fraioli, takes me to task like so:

*Dear Ben:* We understand that the inspection for both the steel and concrete on the above project will be performed by a testing laboratory. We do not feel that this is a proper approach to a job of this magnitude. We feel that, somehow, the design engineer should be permitted to gain full control of the building during construction for which he is responsible.

It is common knowledge that the design engineer in the past has had little control of what occurs during the construction of the building he designs. This is chiefly due to the lack of funds provided in his contract with the architect. The architect, in turn, has no monies over and above his own contract to reimburse the engineer for added inspection that is necessary for the good of the project. Therefore, in the usual architect-engineer contract, the amount of inspection provided is almost negligible. In most cases, it is limited to two field trips, one trip for inspecting the soil capacity and the other made at a much later date, to ascertain the quality of workmanship after a good deal of the project has been completed.

In essence, this condition is not basically sound and there is a general trend to further the responsibility of the engineer to his projects. There is no one who knows the desired strength of the basic structure better than the design engineer and, therefore, it remains that he and he alone be responsible for the structural integrity of the building. His interest is manifested in all phases involving the structure he has designed. Itemized they include the following (all concrete inspection and structural-steel inspection):

INSPECTION: The engineer should inspect the bearing capacity and characteristics of the soil under each footing prior to concreting operations. Schools today are spread over large areas, necessitating many field visits.

CONCRETE INSPECTION: The engineer should be present prior to and during all concreting operations. He should approve the quality of forms, positioning of reinforcing steel and quality of concrete during placing. Method of forming concrete structures varies with the contractor employed and the type and weight of concrete section being cast. The design engineer can best determine the adequacy of the forms provided. The vital significance of the reinforcing steel is inherent in concrete construction. Shop drawings as approved by the design engineer can only convey to him what steel is intended, but unless he is there to inspect it before concreting, there is no assurance that the bars have not been misplaced or omitted. His knowledge of the design requirements of the structure will permit him to observe instantly omissions or displacements.

Of importance, also, is the type and quality of concrete being used. From the plant where it is batched to the point of placement there are many variables which can affect the strength and quality of concrete. To the design engineer, the importance of obtaining quality concrete is synonymous with his obtaining a strong structure. Visual inspection can be more enlightening and conclusive than results obtained from laboratory tests. Strength tests in cylinders have been made which would have indicated weak concrete. Yet ultimately it was found that the failures were attributed not to concrete placed but to the manner in which the cylinders were made or transported.

STRUCTURAL STEEL INSPECTION: The engineer should check fabrication of structural steel prior to shipment to the job. However, it is of more importance that he be permitted to inspect the erection of the site. Here his ability to spot weak points in bolting, welding, bracing, bridging, bearing, etc., coincides with his design knowledge and does not necessarily depend on job prints or specifications. If the structure meets with his approval the owner can be assured of its stability and integrity.

There are testing laboratories today that are equipped with an inspection division. Their performance can consist only of superficial examination, and they are fully dependent on plans and specifications rather than professional engineering knowledge. Their personnel generally are not of professional caliber but men who have been taught to correct errors by experience rather than by inner judgment or design criteria. It is questionable that these same men are capable of projecting the intent of the design. It is our recommendation that consideration be given to allocating the inspection services to the design engineer with the testing laboratory under his supervision.

There is a trend today to follow this procedure. It is not prompted by the desire to gain financially but to promote a further responsibility of the design engineer to his buildings. JOE

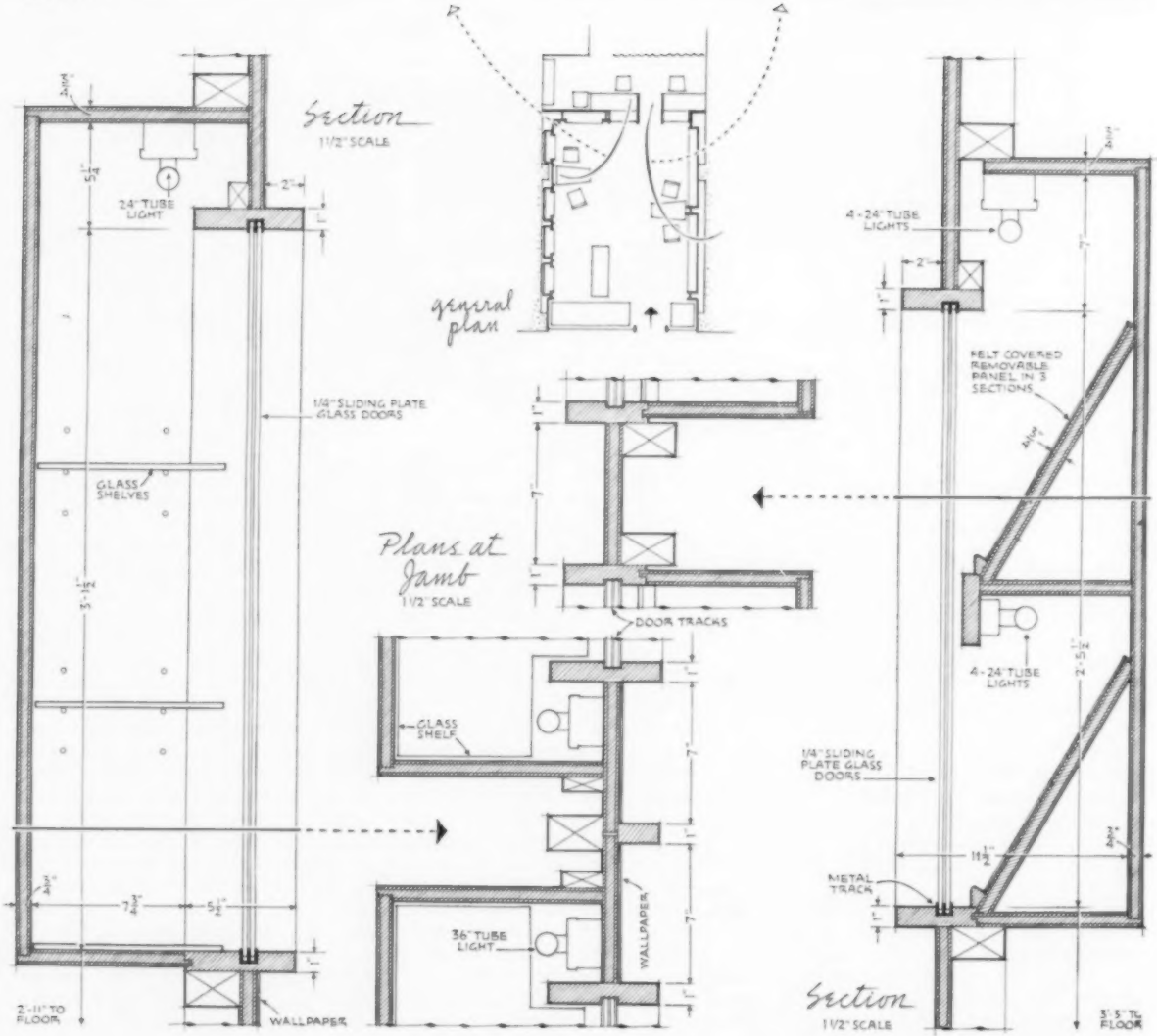
What do you think?

### definitions

I had nothing to do the other night: thought I'd like to have some fun with a few definitions you have undoubtedly been exposed to more than once in various media. I cribbed most of these from a *reliable source* (the guy you just met) who claimed he relied on an *informed source* (the guy who told the guy you just met) who in turn swears he got it from an *unimpeachable source* (the guy who started the rumor originally). To straighten out the problem, I made a *survey* (need for more time to think of an answer) in order to search for *clarification* (to fill in the background with so many details that the foreground goes underground). While the search was *in progress* (so wrapped in red tape that the situation is almost hopeless) I thought I would *look into* (by the time the wheel makes a full turn, it is assumed you will have forgotten about it) *a program* (any assignment that can't be completed by one telephone call) of approach in order to *expedite* (to confound confusion with commotion) my *research work* (looking for the jerk who moved the files). I needed an *interpretation* (your warped opinion pitted against your adversary's good sense) so I called upon a *statistician* (one who draws a mathematically precise line from an unwarranted assumption to a foregone conclusion) who proceeded *to point up the issue* (to expand one page to fifteen pages) at a *conference* (a place where conversation is substituted for the dreariness of labor and the loneliness of thought) where we sought *to activate* (to make carbons and add more names to the memorandum) the study. If you like these definitions, I'll do more of them for you, but first *give me the benefit of your present thinking* (I'll listen to what you have to say, as long as it doesn't interfere with what I have already decided to do) and *will advise you in due course* (if I figure it out, I'll let you know) after I have taken your request *under consideration* (never heard of it).

## display cases

BEN SCHNALL

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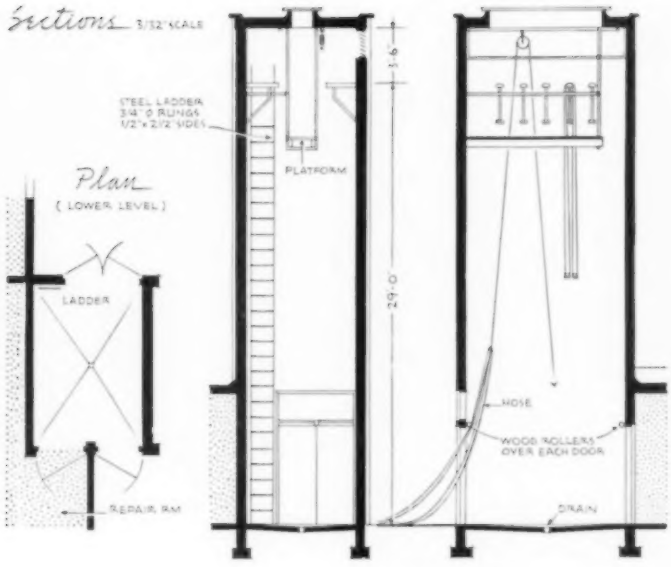
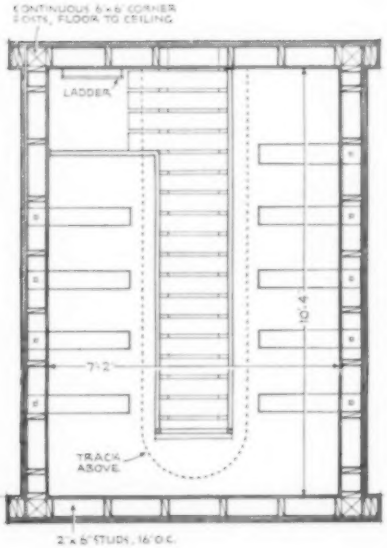
**Hansen & Thuesen, Inc., Designers**

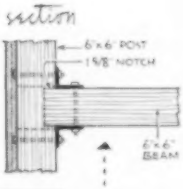
# hose tower

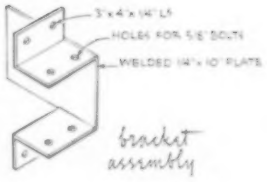


DEARBORN-MAESAR

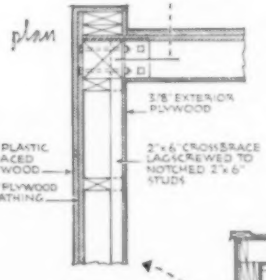



Plan at Platform
1/4" SCALE

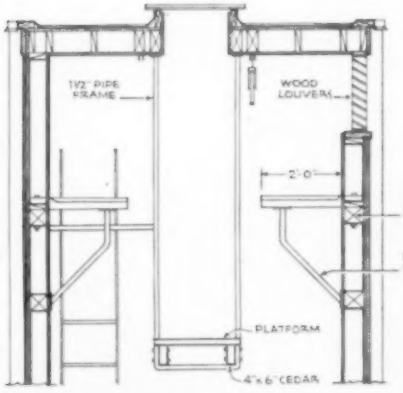



bracket assembly

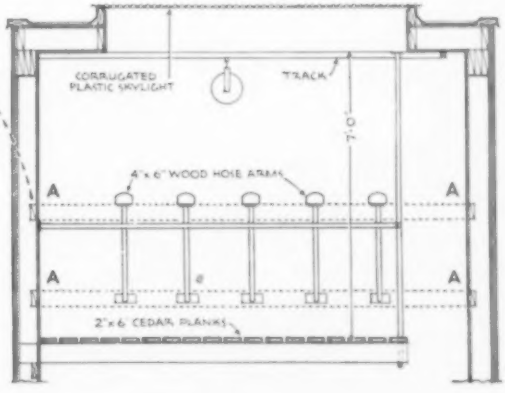



Side Section
1/4" SCALE




Beam Joint A
1/2" SCALE

End Section
1/4" SCALE

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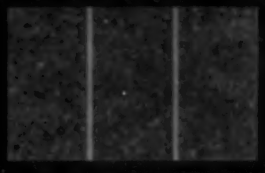

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Louise Sloane

# cargo/passenger ships

**When American President Lines sought luxurious passenger accommodations for its new merchant freighters, S.S. President Jackson and S.S. President Hayes, Anshen & Allen, Architects, of San Francisco, were retained to supervise the arrangement of passenger quarters; and Eleanor Le Maire, designer and color specialist, was selected to design the interiors, including the color theming and lighting.**

**Miss Le Maire's design philosophy of warmth and homelike friendliness as desirable for public places, is richly expressed in the interiors of these luxury freighters. Color, light, space, and textures are used to define areas and to create effective design. Materials were chosen not only for their seaworthiness and adaptability to climate changes, but also for their surface interest and texture contrast. Each area glows with color, as carefully chosen and interrelated as a stained-glass window. The color schemes are varied, but co-ordinated; fresh and gay, but not obtrusive.**

**In designing the furniture, Miss Le Maire has given thoughtful attention to the niceties of comfort on a long voyage. The Staterooms, designed as sitting-bedrooms, are provided with ample storage, dressing-table and writing-desk, adjustable reading lights, tiltable headboards, even "Memory Board" bulletin boards for pinning-up souvenirs. In the Lounge, enough portable furniture is combined with the built-in variety to permit easy re-grouping for conversation or games.**

**"Passenger participation" ideas are introduced in a magnetized ethnological World Map mural, on which the course of the ship may be located with a midget ship model; in a World Clock, which tells the time "wherever you are as well as wherever you came from and are going"; in a self-service bar, conveniently placed in the Card Room off the Lounge.**

**Integrating art with interior design, Miss Le Maire has installed backlighted glass murals over the Dining Saloon buffet, hung American Indian Kachina dolls on the lounge wall of the S.S. President Hayes to key its basic decorative theme, and in the same place aboard the S.S. President Jackson, established a theme with wall-hung American folk sculpture.**

# cargo/passenger ships

| | |
|---|---|
| client | American President Lines |
| subjects | S.S. President Jackson and S.S. President Hayes |
| interior designer | Eleanor Le Maire |
| architects | Anshen & Allen |

lounge S.S. President Hayes

lounge S.S. President Jackson

*Color, warmth, and an atmosphere that is friendly, informal, and inviting, keynote the interior design of the Lounge and adjoining Card Room. The color plan punctuates bronze, beige, and cream with bright accents of blue (ceiling) and orange (dropped ceiling). Built-in settees have drop-down arms. Lounge Chairs, with perforated-metal sides for cool seating, are lightly scaled for easy rearrangement in conversation groups. On the stair wall in the S.S. President Jackson, a collection of American folk sculptures establishes the decorative theme. The same area in the S.S. President Hayes* (smaller photo top) *displays American Indian dolls. Lighting is from overhead recessed-lens lights, supplemented by fluorescent cove lighting. Vinyl-tile deck covering, Fiberglas draperies, were chosen for their practicality.*

Photos (except as noted): Alexandre Georges

milky Plexiglas luminous ceiling, bronze-and-oak framed, fluorescent light

self-service bar, oak sliding doors

Marine acoustical-tile painted light blue

card room

brown-and-beige print on Fiberglas

beige-brown-off-white carpet

# cargo/passenger ships

*Blue, silver and white, with accents of bright red, color-theme the Dining Saloon. The two-level ceiling is painted in two shades of blue, the floor combines blue, white-and-gray marbleized vinyl tile in a diamond design. Chairs are gray-and-blue leather-upholstered. Above the cantilevered oak-and-walnut buffet, a back-lighted glass mural by John and Elaine Urbain shows "America at Play," and in the S.S. President Hayes* (smaller photo below) *the mural suggests a Southwest Indian sand painting. Fiberglas draperies are porcelain blue, walls are mist-gray stained-oak veneer.*

*The "Cloud Room"* (acrosspage below), *elevated a few steps from the Lounge Deck, may be entered from either the Card Room or the portside area. Translucent screens and blue-and-white sheer curtains set off this observation room, which is lighted only by the soft illumination of the World Map mural by Frank Monarchio. This mural is magnetized for a midget model that locates the ship's progress. Ebonized-bamboo chairs are upholstered in a hand-woven fabric.*

**dining saloon S.S. President Jackson**

Dennis Purse

**dining saloon S.S. President Hayes**

oak screens, polyplastic panels

red-blue-white print on draperies

blue-white-gray marbleized vinyl

blue Pantaglass shades

magnetized topographical mural

red-and-blue plaid cushions, turquoise upholstery

bronze frames, handrail

# cargo/passenger ships

*All Staterooms on both the S.S. President Jackson and the S.S. President Hayes follow one of two color schemes. In the "warm" color scheme, walls are Sand Beige and Sun Tan; floors are beige vinyl tile; cotton area rugs are apricot on off-white; upholstery is coral; draperies are Harlequin print on Fiberglas. In the "cool" color scheme, walls are soft blues and greens; floors are gray; rugs are gray on off-white; upholstery is turquoise; draperies repeat appropriate colors in Harlequin print.*

*The "Owner's Suite"* (above *and* top acrosspage) *has a hand-woven carpet of gray, pale mauve, and off-white; upholstery of gray-and-beige with gold threads; striped curtains in turquoise, gray, and off-white. Individual Stateroom* (below acrosspage) *has adjustable berth-reading light, built-in storage and dressing-table desk, leatherette-upholstered tilting headboard.*

## data

### furniture, fabrics

**Furniture:** All designed by Eleanor Le Maire/ built-ins executed by Hershey Lumber Products, Chocolate Ave., Hershey, Pa./ Wood Mfg. Co., Stone & Main Sts., Philadelphia, Pa.; Portable furniture executed by Armstrong Furniture Co., P. O. Box 636, Martinsburg, W. Va./ Top Surfaces: The Formica Co., 4615 Spring Grove Ave., Cincinnati, Ohio.

**Upholstery:** Lounge and "Cloud Room"/ Creative Looms, Inc., 210 E. 51 St., New York, N. Y.; Staterooms/ headboards and chairs/ "Fabrilite"/ E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del.; "Owner's Suite"/ Boris Kroll Fabrics Inc., 220 E. 51 St., New York, N. Y.

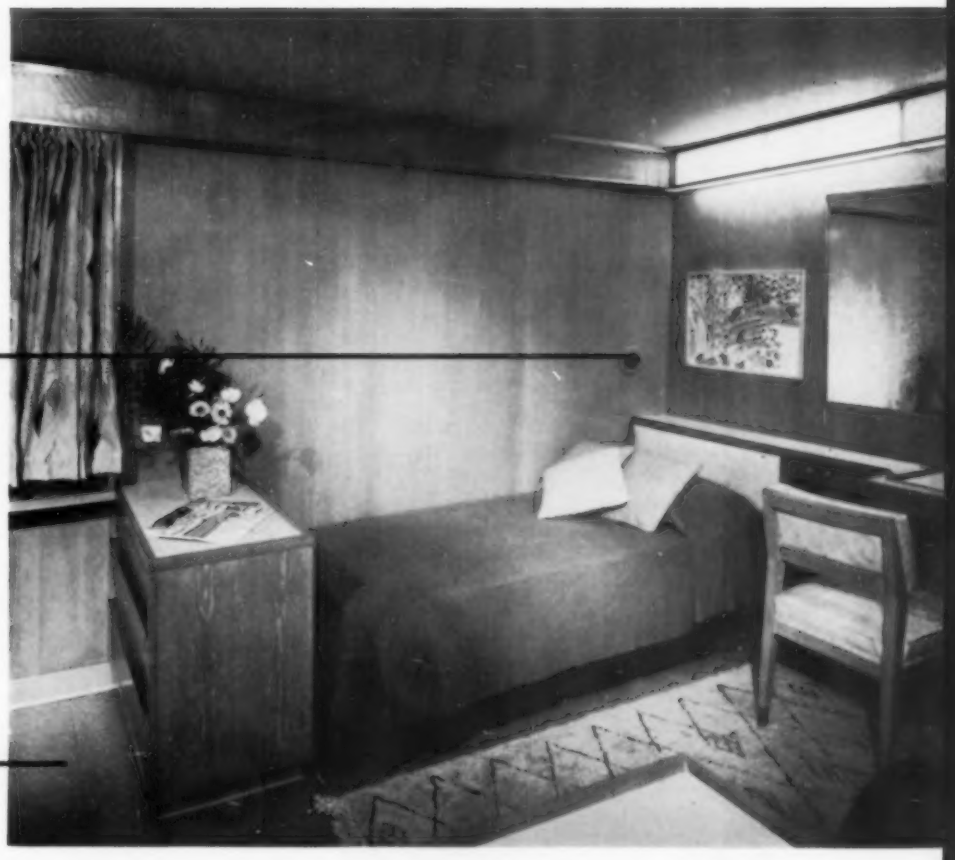
**Drapery:** Lounge/ Arundell-Clark, 425 E. 53 St., New York, N. Y.; Card Room and "Cloud Room"/ Jack Lenor Larsen, 60 E. 58 St., New York, N. Y.; Dining Saloon/ Melco Fabrics Co., 7 W. 29 St., New York, N. Y.; Staterooms/ W. B. Quaintance & Co., Inc., 18 E. 53 St., New York, N. Y.

**Bedspreads:** Staterooms/ Cabin Crafts, Inc., Dalton, Ga.; "Owner's Suite" sitting room/ Wolfin Assoc., Inc., 13 E. 53 St., New York, N. Y.

**Pillows:** Nettle Creek Industries, 261 Fifth Ave., New York, N. Y.

**Window Shades:** "Cloud Room"/ "Pantaglass"/ Pantasote Co., 446 Madison Ave., New York, N. Y.

tufted rug




### walls, ceiling, flooring

**Walls:** "Marinite"/ Johns-Manville Corp., 22 E. 40 St., New York, N. Y.; wall covering in Staterooms, "Cloud Room"/ L. E. Carpenter & Co., 350 Fifth Ave., New York, N. Y.

**Ceiling:** Marine acoustical tile/ Johns-Manville Corp.

**Carpet:** Lounge/ Ernest Treganowan, Inc., 49 E. 53 St., New York, N. Y.; Staterooms/ Needletuft- Cabin Crafts, Inc., Dalton, Ga.

**Floors:** vinyl tile/ Robbins Floor Products, Inc., Tuscumbia, Ala.

### lighting

**Recessed Lens Lights:** Albert Sechirst Mfg. Co., 1717 Logan St., Denver 3, Colo.

**Recessed Dome Light:** Luminator, Inc., 120 No. Peoria St., Chicago 80, Ill.

**Luminous Ceiling** Plexiglas/Rohm & Haas Co., 712 Locust St., Philadelphia, Pa.

### art, accessories

**World Clock in Card-Room:** shatter-proof laminated plate glass set in bronze trim, walnut frame, lacquered-enamel markings in gold and dark blue/ Kalex Corporation, 656 Broadway, New York, N. Y.

**World Map in "Cloud Room":** Frank Monarchio, 241 Sixth Ave., New York, N. Y.

**Decorative Murals in Dining Saloon:** John & Elaine Urbain, 137-21 83 Ave., Kew Gardens, Queens, N. Y.

### installations

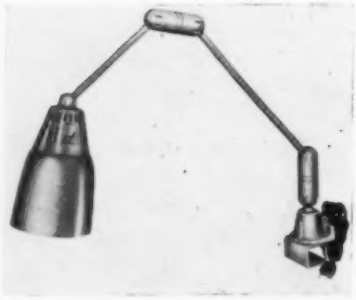
**Bulkheads, Deck, Overhead:** Bethlehem Steel Corp., Shipbuilding Division, Key Highway Yard, Baltimore, Md.

**Joiner Work:** Aetna Steel Products Corporation, 730 Fifth Ave., New York, N. Y.

**Curtain Making and Installation:** Robert Le Fort Co., Inc., 1825 Wylie St., Philadelphia, Pa.

**Observation Windows:** "Solex Herculite"/ Pittsburgh Plate Glass Co., Pittsburgh, Pa.

**"Hospital-Lite":** #7202/ attaches to hospital bed-rail/ patented spring-tension adjustable sockets and swivels assure rigidity in desired positions/ Gray/ **"Coolite"** shade prevents burns/ **retail:** $18.95/ **Swivelier Co., Inc., 43 34 St., Brooklyn 32, N.Y.**

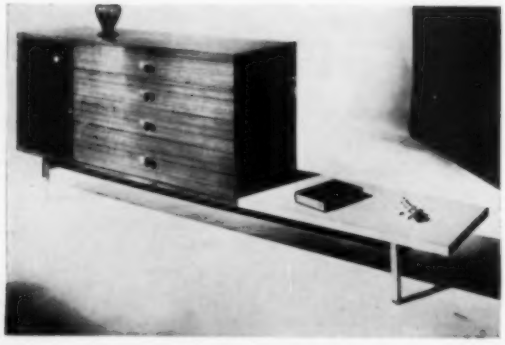


**"Karpet-Squares":** 18" squares of cotton carpet, each with built-in cushion and pressure-sensitive adhesive backing/ self-sticking on any surface, including primed cement/ may be applied in varied designs —checkerboard, harlequin, stripes, and so on/ available in 12 colors/ burned, stained, or worn areas may be easily removed by replacing only the damaged square/ **retail:** $1.69 per square/ **Allen Industries, 1927 Leland Ave., Detroit 7, Mich.**

**"Pin-Ups":** brass or copper perforated shades/ bases of natural wood, including mahogany, or of metal in coral, chocolate brown, green, black, oyster/ **retail:** $11.95 for single-light and $16.95 for twin-light/ **Prescolite Mfg. Corp., 2229 Fourth St., Berkeley, Calif.**

**Merchandising Table:** Of cabinet wood, with stainless-steel-edge frame, laminated-plastic top/ 28" high, 30" deep, 60" long/ superstructure of welded, square, tubular steel, with adjustable brackets and glass shelves/ superstructure constructed for flexible use with one to four tables to meet merchandising changes/ also available in extruded architectural bronze, superflite aluminum or plextone-finished, welded-steel-edge frames/ **The Columbus Show Case Co., 850 West Fifth Ave., Columbus 8, Ohio.**

**Modular Furniture:** storage units (below left) in walnut or korina, white micarta table top, black rolled-steel runners, satin-chrome legs/ seating-unit system (below) based on 30"-square module, includes 8 seating, storage, and table-top components/ assembly shown includes two seat units (each 19½" high x 30" diam. x 30" wide)/ **retail:** $230 each; one arm unit, $70; table top unit, $70/ designed by George Nelson/ **Herman Miller Furniture Co., Zeeland, Mich.**



# accent on youth

Student Lounge area,
Orange Coast College,
Costa Mesa, California.
Robert E. Alexander,
Architect, Los Angeles.

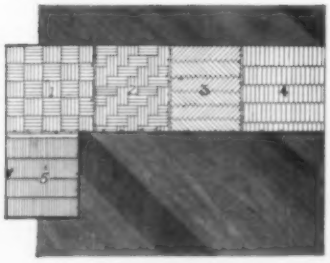
Dining area,
Orange Coast College
Both areas floored with block-patterned Northern Hard Maple.

*the finest floor that grows*

*foot-friendly*

# NORTHERN HARD MAPLE

In today's concept of the ideal educational environment, cheerful brightness, *for sound reasons*, is swiftly supplanting the somber austerity of yesteryear's scholarly surroundings. Happily, architect and schoolman find, ready-to-hand, in abundance, Nature's most nearly perfect flooring material to help advance this concept... Northern Hard Maple, **MFMA**-certified. Its rich, bright lustre leaps into life under routine maintenance. It fights scuffs, scars and dents for generations. It adds "muscle" to the structure. It's versatile—meets every school area use admirably, sports and social, classroom and administrative. It is far from costly—cheap, in fact, when endurance and low upkeep are considered. Trust **MFMA** Northern Hard Maple, America's *forever*-modern flooring. For technical data SEE SWEET'S (Arch. 13j-MA). Write for latest (1956) listing of **MFMA**-approved floor finishing products and methods.



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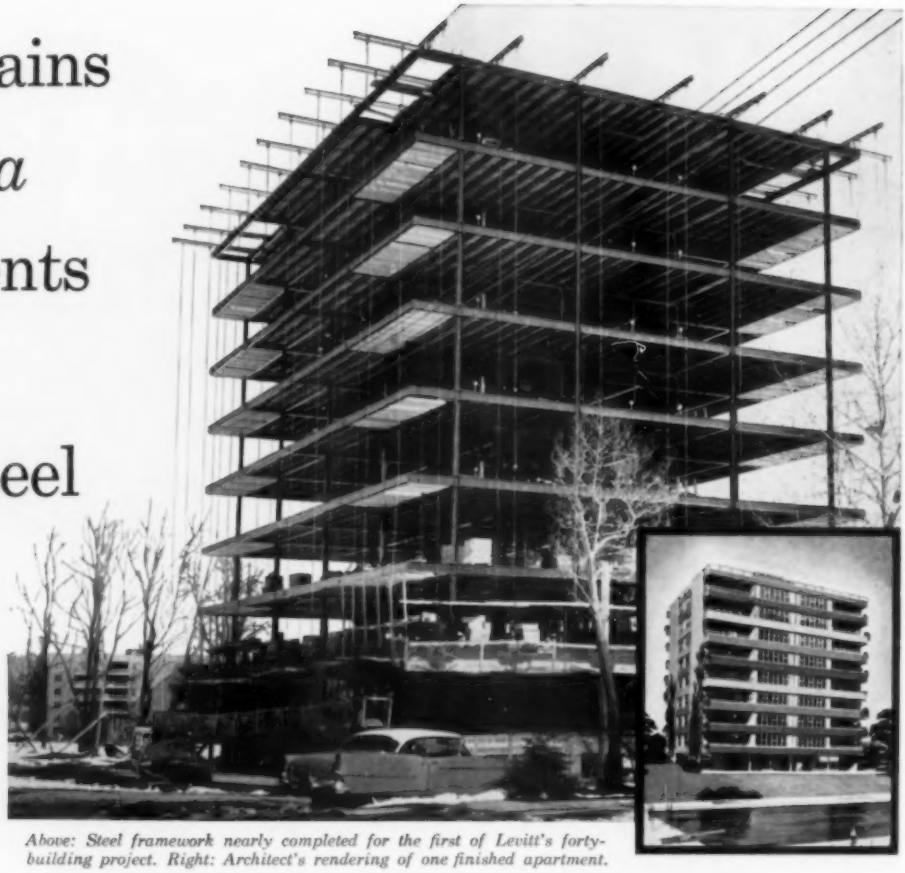
*FLOOR WITH* **NORTHERN HARD MAPLE,** *BEECH AND BIRCH*

# Levitt gains 160 *extra* apartments using Stran-Steel joists



*Above: Steel framework nearly completed for the first of Levitt's forty-building project. Right: Architect's rendering of one finished apartment.*

Zoning height restrictions in the Borough of Queens, New York, would have limited the luxuriously planned Levitt apartment-community buildings to only seven floors, using ordinary construction. But, by using new Stran-Steel 10-inch nailable joists, 2½″ of height was eliminated per floor making it possible for each of the forty buildings to be eight stories high and well within the zoning limitations.

Actually the forty-building Levitt project will gain 160 more apartments since each floor will have four large apartments.

In addition to saving space, Stran-Steel joists make possible other important economies. For example, the Levitt buildings require less steel tonnage because the joists are lightweight but furnish all the strength required. Exterior brick work requires one less course of bricks per floor. And for interior flooring, precast concrete slabs are nailed directly to the joists. This time- and labor-saving feature is made possible by the exclusive nailable design of Stran-Steel joists.

Besides the new 10-inch nailable joist, Stran-Steel provides nailable 6″, 8″, 9″ and 12″ sizes. The 10″ and 12″ sizes are available in lengths up to 30′. For further details of Stran-Steel joists and other architectural products, contact your nearest Stran-Steel Architectural Products dealer or send the convenient coupon.

Stran-Steel Corporation, Ecorse, Detroit 29, Michigan

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MIDDLETOWN, CONNECTICUT

Architect: **WARREN H. ASHLEY,** West Hartford, Conn.
Mechanical Engineers: **MARCHANT and MINGES,** W. Hartford
Heating Contractor: **K. R. GRAHAM,** Hartford, Conn.

**Jury:** "A true campus-type plan well organized within its natural setting. Nature trails, open air theater, scouting areas and recreational facilities indicate wise use of the total site."

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*"... provides incalculable savings in time and in extra hotel revenue"*

SAYS MR. M. LAPIDUS, ARCHITECT for the elegant Eden Roc Hotel, Miami Beach, Florida

*Eden Roc*

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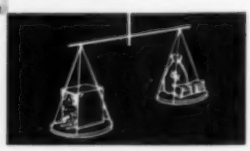

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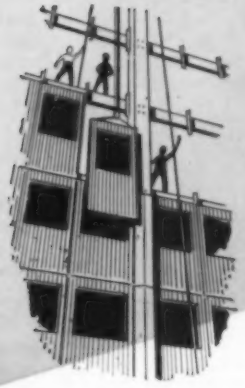
# RESPONSIBILITY

## IN THE CURTAIN WALL JOB



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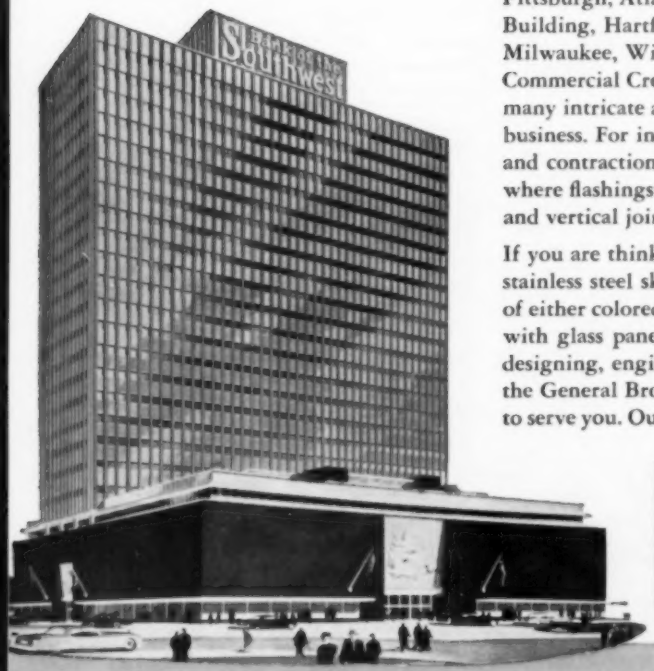


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*Architect:* Kenneth Franzheim
*Contractor:* W. S. Bellows Construction Co.

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# p/a manufacturers' literature

*In recent years, I-B-R (Institute of Boiler & Radiator Manufacturers) has expanded its activities to include investigations on cooling equipment for use with residential steam and hot-water heating systems. With data obtained from research in this field, and with information published by the American Society of Heating & Air-Conditioning Engineers, I-B-R Technical Secretary Arthur L. Wales has prepared* Cooling Load Calculation Guide No. C-30*—a simplified procedure for the calculation of residential cooling loads.*

*Step-by-step instructions, accompanied by examples, have been presented so that even persons without previous experience or technical education can follow the procedure correctly. Areas and volumes, outdoor design conditions for all sections of the United States, heat-gain factors for common building assemblies, and Btu requirements are obtained directly from tables. In addition, several samples of I-B-R Cooling Calculation Sheet No. 3001 are enclosed.*

*Copies of* Cooling Load Calculation Guide No. C-30 *are available from the Institute of Boiler & Radiator Manufacturers, 608 Fifth Ave., New York 20, N. Y. $1*

L. G.

*Editor's Note: Items starred are particularly noteworthy, due to immediate and widespread interest in their contents, to the conciseness and clarity with which information is presented, to announcement of a new, important product, or to some other factor which makes them especially valuable.*

## air and temperature control

**153. Agitair Stripline Diffusers** (S-104), 16-p. booklet on continuous-strip air diffusers. Shows three types of diffusers for ceiling, wall, sill, or baseboard installation; includes drawings of suggested applications. Design section outlines selection procedure and typical example. Photos; performance charts; specifications. Air Devices Inc., 185 Madison Ave., New York 16, N. Y.

**154. American Blower Axial Fans** (B-1013), 36-p. bulletin containing information on fans for ventilation, process-air supply, and process-air recirculation. Explains principles of tubeaxial and vaneaxial flow; shows arrangements for horizontal or vertical airflow. Describes several types of axial fans; gives data for selection of proper fan. Drawings; performance-data tables; charts on friction losses and duct sizing; specifications. American Blower Corp., Detroit 32, Mich.

**155. Carrier Automatic Absorption Refrigeration,** AIA 30-F-22 (16C-8), 36-p. booklet presenting completely automatic absorption-type refrigeration machine designed to supply chilled water for large air-conditioning systems. Explains advantages of absorption-type unit in installation costs, operating expenses, performance, and size of unit; describes operation of machine. Includes engineering data for design and installation of refrigeration system. Photos; drawings; specifications. Carrier Corp., Syracuse 1, N. Y.

★ **156. Kno-Draft "Architects' Group" Diffusers** (K-27), 12-p. catalog featuring line of square and slotted air diffusers. Illustrates three types of square diffusers designed to give precise circular diffusion patterns over large area; shows two rectangular slotted diffusers—for one-directional or multidirectional flow—developed to give good diffusion characteristics. Presents instructions for selecting proper unit, including dimensioned drawings and performance charts for each model. Photos of typical installations; charts. Connor Engineering Corp., Danbury, Conn.

**157. Electriglas Radiant Heat,** AIA 30-C-44 (EL-16), 12-p. publication giving data on glass radiant-heating panels. Describes construction of unit from tempered glass with chemical heating element permanently fused into back surface; shows several types of panels for wall, ceiling, and baseboard locations. Drawings; dimensions; specifications. Electriglas Corp., Bergenfield, N. J.

**158. Punkah Louvers,** AIA 30-J, 8-p.
**159. Drum Punkah Louver,** AIA 30-J, 4-p.
Two pamphlets on diffusers for high-velocity air delivery, developed orignally for use on ships. First bulletin describes round, nozzle-type outlet; explains how finger-tip control of nozzle directs air distribution. Second bulletin shows revolving louvered drum with adjustable vanes. Both give selection data, dimensions, and drawings. Thermotank, 11191 Lappin Ave., Detroit 5, Mich.

## construction

**215. Architectural Woodwork: Moldings and Trim,** AIA 19-E-3 (8), 8-p. booklet giving data on wood moldings and trim for interior and exterior applications. Lists portions of buildings lending themselves to decorative trim; suggests proper wood for each type of molding. Provides detail drawings and photos of several installations; gives guides for design and specification of wood trim. Architectural Woodwork Inst., 332 S. Michigan Ave., Chicago 4, Ill.

**216. Stainless-Steel Roof-Drainage Guide,** AIA 12-I, 4-p. file folder for design of roof-drainage systems. Provides directions for computing gutter and leader sizes; gives dimensions and drawings of standard gutters, leaders and fittings. Also outlines advantages of stainless steel for drains; suggests methods for installing stainless-steel drainage parts. Armco Steel Corp., Middletown, Ohio.

**217. Fireplace Dampers,** AIA 14-E (VC-100), 12-p. pamphlet presenting information on throat dampers designed for contemporary fireplaces. Shows damper with lintel support, made especially for fireplaces with one or more sides open; illustrates steel-plate damper with built-in expansion joint; includes cast-iron damper with steep slope for better funneling of smoke. Details of fireplace construction and damper installation; design charts; drawings. Bennet-Ireland, Inc., 12 Exchange St., Norwich, N. Y.

**218. Radiant-Heating Construction,** 8-p. report on recommended installation procedures for radiant-heating systems. Shows constructions for on-grade and above-grade installations, arranged in order of preference; presents suggestions for construction of slab, insulation, and flooring. A. M. Byers Co., Box 1076, Pittsburgh 30, Pa.

**219. Vizupoles: Flexible Partitioning** (365), 28-p. brochure featuring flexible partitioning system designed mainly for commercial use, but adaptable to residential and office partitions. Sketches show vertical supports—held in place between floor and ceiling by tension device—and attachment of shelving, brackets, or panels; also illustrates semipermanent supports for heavier loads, which lock into floor and ceiling plates. Includes data on adjustable floor-to-ceiling partitions; gives drawings and dimensions of supports and fittings. L. A. Darling Co., Bronson, Mich.

**220. Schools with Flexicore Slabs,** 20-p. brochure showing schools built with pre-

cast-concrete floors and roofs. Features eight pages of plans and construction details of contemporary school buildings; actual examples illustrate how precast-concrete structural system speeds up construction, reduces maintenance costs, and provides finished ceilings with integral ducts for heating. The Flexicore Co., Inc., 1932 E. Monument Ave., Dayton 1, Ohio.

**221. Granco Steel Roof Deck,** AIA 12-C (BDr-562), 8-p. bulletin containing information on ribbed sheet-metal roof decking. Describes advantages of 28¼"-wide roofing to speed placement and reduce side laps; explains design of ribs to utilize maximum strength of steel. Gives instructions for placing decking and fastening to structural steel by electric arc welding. Details; tables of safe loads and physical properties; specifications. Granco Steel Products Co., 6506 N. Broadway, St. Louis 15, Mo.

**222. Hasko-Struct Plastic Sandwich Panels,** 8-p. publication on laminated-plastic sandwich panels. Shows standard panels of polyester-impregnated glass-fiber cloth with plywood, foamed-plastic, or plywood and foamed-plastic cores; illustrates standard battens, channels, angles, and anchor clips. Details of typical assemblies; chart of properties; tables of maximum deflection and ultimate loads for foam-core panels. Haskelite Mfg. Corp., 701 Ann St., N.W., Grand Rapids 2, Mich.

**223. Furred Metal-Lath Ceilings,** AIA 20-B-1 (16), 4-p. folder describing furred ceilings under steel, concrete, or wood joists. Discusses advantages and recommended applications of furred ceilings; gives complete specifications; provides details for ceilings in wood, steel, and concrete structures. Tables for: size and spacing of cross furring; types and weights of metal lath; fire-resistive ratings. Metal Lath Manufacturers Assn., 636 Engineers Bldg., Cleveland 14, Ohio.

**224. Porcelain Enamel in Architecture: Part I—Veneer-Type Construction,** AIA 15-H-2, 24-p. design manual for porcelain-enameled steel and aluminum veneer panels. Discusses how and where to use porcelain enamel on exterior walls, exterior trim, special details, and interior surfaces; includes typical details as well as photos for each type of installation. Design-data section gives information on colors, finishes, and fabrication of panels, back-up materials, and attachment methods. Specifications. Architectural Div., Porcelain Enamel Inst., 1145 19 St., N.W., Washington, D. C.

## doors and windows

**362. Ador Sliding-Glass Doors,** AIA 16-E, 12-p. colored brochure illustrating all-aluminum sliding-glass doors. Describes construction of completely weathersealed doors; presents isometric drawings showing standard sections and special adaptor for double glazing. Photos; one-half scale details; specifications. Ador Sales, Inc., 2345 W. Commonwealth Ave., Fullerton, Calif.

**363. Anderson Windowalls,** AIA 16-L (561), 36-p. catalog of weatherstripped wood window units. Photos show typical installations of wood windows as awning, hopper, casement, or fixed unit; also illustrates standard casement units, gliding windows, pressure-seal double-hung units, and basement windows. Details of installation in wood-frame construction; charts of dimensions for standard units; specifications for each type of window. Andersen Corp., Bayport, Minn.

**364. Houze Lo-Tran Glass** (L-2), 4-p. brochure featuring neutral-gray-colored window glass manufactured to meet Balanced-Brightness requirements of National Council of Schoolhouse Construction. Outlines special advantages of gray window glass; lists goals recommended for visual comfort and efficiency in classrooms. Color drawings show use of gray glass in sidewall windows shielded by roof overhangs, in classrooms with top-lighting panels, and in schoolrooms depending on electric lighting. Photos; physical properties of glass; wind-velocity tables. Houze Glass Corp., Point Marion, Pa.

**365. StypoLight Panels,** AIA 26-A-9, 8-p. brochure on resin structural panels, reinforced with glass fibers. Illustrates properties of light-transmitting panels; shows several actual installations. Typical details for industrial-daylighting application; specifications. H. H. Robertson Co., 2400 Farmers Bank Bldg., Pittsburgh 22, Pa.

**366. KoolShade Sunscreen,** AIA 35-P-1, 8-p. booklet describing sun-shading window screen made up of tiny louvers permanently set at optimum angle for blocking sun's rays. Outlines advantages of screen for controlling solar heat and eliminating insects; shows two types of screening—for average locations, and for conditions demanding maximum sun control. Details of screen framing; specifications. Reflectal Corp., 310 S. Michigan Ave., Chicago 4, Ill.

**367. Soss Hinges and Latches,** 4-p. circular showing invisible door hinges and lever-type latches. Gives data on hinges varying in size from cabinet-door hinges to those for heavy exterior doors; provides information on lever latches which eliminate projecting door knobs. Details, dimensions, and specifications for hinges. Soss Mfg. Co., 21777 Hoover Rd., Detroit, Mich.

**368. Vampco Aluminum Windows,** AIA 16-E, 48-p. catalog on line of aluminum window units. Shows: standard projected sections; heavy-section window wall with vents; multistory window with panes projecting in—for ease of cleaning; heavy-frame tubular sections; and ribbon windows. Also contains data on heavy-section custom windows. Drawings and dimensions for each type of window; specifications. Valley Metal Products Co., Plainwell, Mich.

**369. Fulton Architectural Aluminum Entrances,** AIA 16-E (156), 12-p. publication illustrating aluminum doors, frames, and entrances. Shows construction of narrow-stile, standard, and custom-built wide-stile entrances; gives dimensions and installation details for each type. Photos; specifications; data on hardware and accessories. Variety Mfg. & Engineering Co., 810 W. Fulton St., Chicago 7, Ill.

## electrical equipment, lighting

**448. GE Raceways** (18-255), 20-p. bulletin containing information on heavy- and thin-wall steel raceways. Describes zinc-coated rigid-steel conduit having organic coating applied over zinc for increased exterior protection, and antifriction coating on interior; also gives data on black-enameled steel conduit, welded-steel tubing, and plastic-coated raceways. Dimensions; tables of allowable conduit and tubing fill for various types of cables; specifications. Construction Materials Div., General Electric Co., Bridgeport 2, Conn.

**449. Fermont Engineered Kilowatts** (955), 8-p. pamphlet on electric plants powered by internal-combustion engines. Outlines factors to consider in selecting electric plant—especially one for emergency service; describes basic electric-plant

(Continued on page 162)

PROGRESSIVE ARCHITECTURE, 430 Park Avenue, New York 22, N. Y.

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# p/a manufacturers' literature

(Continued from page 161)

unit available with manual or automatic starting controls. Specifications; drawings; selection chart. International Fermont Machinery Co., Inc., Ramapo, N. Y.

**450. Sightron Fixtures,** AIA 31-F-23 (16), 16-p. booklet presenting line of lighting fixtures with finely ribbed polystyrene diffusers. Reviews features of pure-white, glare-filtering diffuser; describes construction of fixtures. Gives drawings, dimensions, and performance data for recessed and flush-mounted fixtures. Lightolier, 11 E. 36 St., New York, N. Y.

### finishers, protectors

**509. How Zinc Controls Corrosion, 36-p.** booklet explaining use of zinc in reducing maintenance costs and extending life of steel. Discusses process of galvanic action; describes protection of steel by hot-dip galvanizing, electrogalvanizing, metallizing, and sherardizing; outlines advantages of each method. Also includes data on zinc pigments in metal-protective paints and zinc anodes for cathodic protection of steel. Photos; charts. American Zinc Institute, Inc., 60 E. 42 St., New York 17, N. Y.

**510. Paint Specification Guide,** AIA 25 (A18-56), 12-p. guide compiled to help architects and interior designers prepare better painting specifications. Gives recommended form for general specifications; provides detailed painting specifications for first and finish coats of paints, stains, or varnishes. Chart lists types of surfaces, construction, and recommended finishes; product-description data outlines characteristics and coverage of materials. The Martin-Senour Co., 2520 S. Quarry Ct., Chicago 8, Ill.

### sanitation, plumbing, water supply

**711. Act-O-Matic Shower Heads,** AIA 29-H-3, 12-p. bulletin on automatically self-cleaning shower heads. Outlines special features of shower heads; shows units for residential and institutional installations. Also includes data on flush-valve operated shower heads. Drawings; specifications. Sloan Valve Co., 4300 W. Lake St., Chicago 24, Ill.

**712. Chemical-Porcelain Laboratory Sinks** (L-8), 20-p. booklet on line of standard-size solid-porcelain laboratory sinks. Explains manufacture of sinks in nonstaining blue-gray finish; shows standard-size sinks with or without drainboards. Also illustrates custom-built sinks hand-made in special shapes. Drawings; dimensions; specifications. Chemical Ceramics Div., U. S. Stoneware Co., 60 E. 42 St., New York 17, N. Y.

**713. Stainless-Steel Sinks and Drainboards,** AIA 29-H (56), 36-p. catalog showing line of stainless-steel sinks, drainboards, and counters. Gives dimensioned drawings for sinks without or with drainboards; shows stainless-steel lavatories. Ordering instructions; specifications. Zeigler-Harris & Co., 2900 N. San Fernando Rd., Burbank, Calif.

★ **714. Moen Faucets,** AIA 29-H-5, 4-p. bulletin featuring single-handle mixing faucets. Explains operation of faucet controlled by single stainless-steel piston. Shows deck-type and wall-type units for kitchens; illustrates mixing valves for showers and tubs; covers faucets for laboratories and commercial uses. Drawings; description of each model. Moen Valve Co., 6518 Ravenna Ave., Seattle 15, Wash.

### surfacing materials

**925. Creo-Dipt Cedar Shingles, Shakes, and Coatings** (OKP), 50-p. booklet on cedar siding materials. Describes optional color plan whereby shakes and shingles are supplied factory stained in one linseed-oil-base prime coat; final color—

(Continued on page 168)

To assure that the sound system you recommend reflects credit upon your professional reputation, call in your local RCA Engineered Sound Distributor. He is qualified through training and experience to relieve you of the many details of laying out the most effective audio system for any project . . . school, hospital, hotel, industrial plant, store, stadium, office building, church. This helpful service is yours for the asking—and well worth asking for!

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# 18,000 extra rent dollars per year

## with curtain walls of porcelain-enameled steel on a framework of USS Structural Steel

This is the First Security Bank Building in Salt Lake City. The strong, rigid structural steel framework for this beautiful and efficient building was fabricated and erected by the American Bridge Division of United States Steel.

But rather than stress the framework, we would like to point out the advantages of curtain wall construction—in buildings like this—which the structural steel framework has made possible.

If conventional wall construction had been used in this building, the masonry walls could have weighed about 125 pounds per square foot of wall area. But through the imaginative use of brightly colored, porcelain-enameled steel panels, the walls are only *three* inches thick and weigh only *twelve* pounds per square foot, cutting the deadweight by 3,000 tons. And the thin walls have added 4,000 square feet of rentable area—resulting in 18,000 extra rent dollars every year.

From the simple standpoint of eye-popping drama, there is no other large commercial building in the city to equal this one. It is proof that architects are wisely taking advantage of the auxiliary benefits that can be realized through the proper combination of today's modern structural materials—structural steel, stainless steel and porcelain-enameled steel.

For structural strength, no other material can match the physical properties of steel. And for richness of color, durability and cost, porcelain-enameled steel is unique in the field of curtain wall materials. When you combine it with Stainless Steel, there is almost no limit to the number of design variations possible.

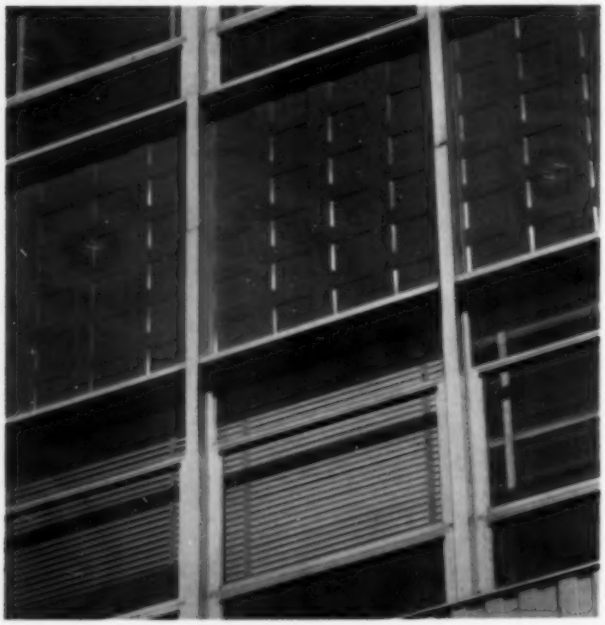
Write for more information to United States Steel, Room 5403, 525 William Penn Place, Pittsburgh 30, Pa.

*Main entrance to the bank. Notice how columns are covered with Stainless Steel to improve appearance and reduce maintenance costs.*

*Interior columns in the public bank area are also covered with Stainless Steel, to resist scuffing and chipping.*

Architect: Bank Building and Equipment Corp., St. Louis.
Associate Architect: Slack W. Winburn, Salt Lake City.
Panel Erector and Fabricator: Seaporcel Metals, Inc., Long Island City, N. Y.
Builder: Utah Construction Company, Salt Lake City.

*Enameled panels are embossed with 8-inch squares, ¾-inch deep, to improve appearance and rigidity.*



**USS STEELS FOR ARCHITECTURAL DESIGN**

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**J-M Class A Asbestos Walls are movable . . . save space and make space . . . are noncombustible, moderately priced . . . come in pleasing colors**

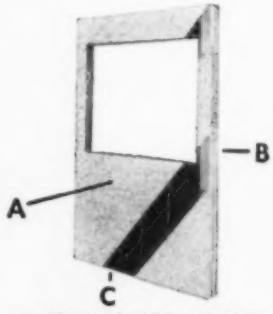
New Johns-Manville Class A Movable Walls offer you advantages never before combined in an asbestos movable wall. They are modestly priced. They are noncombustible. They have a textured, stipple finish in restful colors. They reduce maintenance and relocation costs to a new low.

The finish of Johns-Manville Class A Movable Walls is a tough, hard film much thicker than on the usual movable partition. It is mar- and scratch-resistant . . . rejects stain and soil . . . can be easily washed and even scrubbed, if necessary. If damaged, it can be touched up inexpensively to look like new . . . and, unlike other types of factory-finished partitions, can be repainted with ordinary paint.

**Undivided responsibility for a complete job**

These flush or glazed partitions are erected as well as furnished by the Johns-Manville Construction Department complete with doors, door hardware, glass and trim.

For details about J-M Class A Asbestos Walls, consult your Sweet's Architectural File, or write Johns-Manville, Box 158, Department PA, New York 16, New York. In Canada, write 565 Lakeshore Road East, Port Credit, Ontario.




**A** Noncombustible asbestos-cement surfaces

**B** Generous reinforcing for added strength

**C** Noncombustible all-mineral insulating core

**See "MEET THE PRESS" on NBC-TV, sponsored on alternate Sundays by Johns-Manville**

**Johns-Manville**

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**There's more vinyl in every tile of *Bolta Floor*... stays beautiful longer ...with or without wax!**

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**Also available in 22 marbleized and solid colors!**

Here is the rich, authentic beauty of old-world terrazzo—in wonderful, modern, "soft-to-the-step" Bolta-Floor vinyl tile! Bolta-Floor is a high-content, homogeneous vinyl floor tile that assures longest wear and lowest possible maintenance costs. Bolta-Floor will keep its gleaming beauty through years of hard use!

"Terrazzo" Bolta-Floor is produced in 16 beautiful decorator colors—and in 6 x 6, 9 x 9, 12 x 12 and 18 x 18 tile sizes (⅛" or .080" gauge).

Don't settle for less! Get the *genuine* beauty of new Bolta-Floor "Terrazzo."


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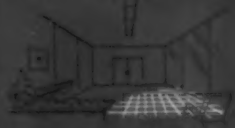

THEATRES

SCHOOLS

*For samples write:*

THE GENERAL TIRE & RUBBER COMPANY

FLOORING DIVISION • AKRON 9, OHIO

# p/a manufacturers' literature

(Continued from page 162)

available in 22 shades—is supplied for finish coat on job. Gives information on scored, sanded-finish, and hand-split shakes; also shows recommended installation over insulation board, over natural red-cedar undercoursing shingles, and over gypsum sheathing. Color charts; drawings; specifications. Creo-Dipt Co., Inc., North Tonawanda, N. Y.

**926. Marlite Wall and Ceiling Panels,** AIA 23-L (15551), 8-p. bulletin illustrating plastic-finished interior surfacing material. Shows panels in solid colors, with tile scoring, in eight wood finishes, and in five marble patterns; gives description and dimensions for each type. Also includes data on T&G hollow-core paneling available in solid colors and wood finishes. Marsh Wall Products, Inc., Dover, Ohio.

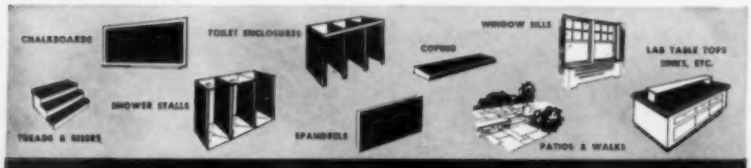
**927. Spartan Ceramic Tile,** AIA ★ 23-A-1, 38-p. file folder enclosing data on ceramic tiles. Color photos of actual installations indicate possibilities of tiles; color charts show individual tiles. Illustrates glazed-ceramic mosaics, natural-clay unglazed-ceramic mosaics, natural-clay unglazed dust-press tiles, and unglazed porcelain tiles; reviews physical properties of each type of tile and gives recommended applications; provides dimensions and shapes for each material. Architectural-data section includes tile drawings for several interesting installations; provides drawings of many patterns using large and small tiles. The Sparta Ceramic Co., E. Sparta, Ohio.

**928. Tile for Swimming Pools,** AIA 23-A (800), 12-p. guide for design of indoor swimming pools prepared in collaboration with Architect Harold Sleeper. Provides design standards of several U. S. athletic associations; gives dimensioned layout of competitive-type pool. Dimensioned details show construction and tile installation for competitive and noncompetitive pools; includes complete tile specifications for indoor and outdoor swimming pools. American-Olean Tile Co., 1000 Cannon Ave., Lansdale, Pa.

*Slate Chalkboards Are Standard Equipment At Brooklyn, New York's Ultra-Modern General George W. Wingate High School . . . the "Banjo-Type" School . . . One Of The Many Modern Schools Specifying Slate Chalkboards.*

*KELLY & GRUZEN Architects - Engineers*

Of all chalkboards, slate communicates best. White chalk on slate produces the desired high contrast to permit the student to grasp the written message instantaneously! The writing surface of slate, too, is so superior that it is the standard to which the writing qualities of all other substitutes are compared! Easy to clean . . . virtually indestructible . . . slate is lowest in maintenance costs under normal usage conditions. For timeless beauty and durability, compare before you install . . . inquiries welcomed on specific properties of slate.

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**PEN ARGYL PENNSYLVANIA**

natural slate . . . 500 million years in the making


## interior furnishings

**50. Cutting Costs With Carpet,** 8-p. report on study made to compare costs of maintaining carpeted and noncarpeted floors. Explains how study was made; charts results of tests according to heavy, medium, and light traffic conditions. Also outlines advantages of carpet in quietness, comfort, and safety. Carpet Institute, Inc., 350 Fifth Ave., New York 1, N. Y.

**51. Deltox Rugs and Carpet,** 20-p. brochure presenting line of woven-fiber rugs in contemporary patterns. Color photos show rugs woven of kraft fibers and wool-rayon-acetate yarns; illustrates tweeds, solid colors, and several patterns. Gives data on sizes, cleaning, and installation of rugs. Floor Div., Armstrong Cork Co., Lancaster, Pa.

**52. Crane Kitchens,** 16-p. publication showing line of kitchen cabinets and sinks. Describes five popular sink units; color rendering shows units installed in modern kitchens. Also gives data on wall and base cabinets; covers cabinet accessories. Color chart; drawings. Crane Co., 836 S. Michigan Ave., Chicago 5, Ill.

**Naugahyde Vinyl Upholstery,** catalog of colors and patterns available in washable, fade-resistant vinyl upholstery material. Gives full-page sample as well as complete color card of samples for each pattern. Shows 10 patterns ranging from simple textured to decorative designs; includes two grades of glazed-antique and burnished-antique leather patterns. Available only on direct application to Coated Fabrics Div., United States Rubber Co., 407 N. Main St., Mishawaka, Ind. $8.25.

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## LUSTRACRYSTAL* will substantially cut glass costs"

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American manufactures sheet glass with the least distortion and the greatest clarity, whiteness and luster.

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**LUSTRAWHITE**—a picture glass of exceptional clarity and flatness.

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**BULB EDGE GLASS**—for use as counter dividers, wind deflectors and shelves.

**THIN GLASS**—for microscope slides and covers. Extremely flat and true to tolerance.

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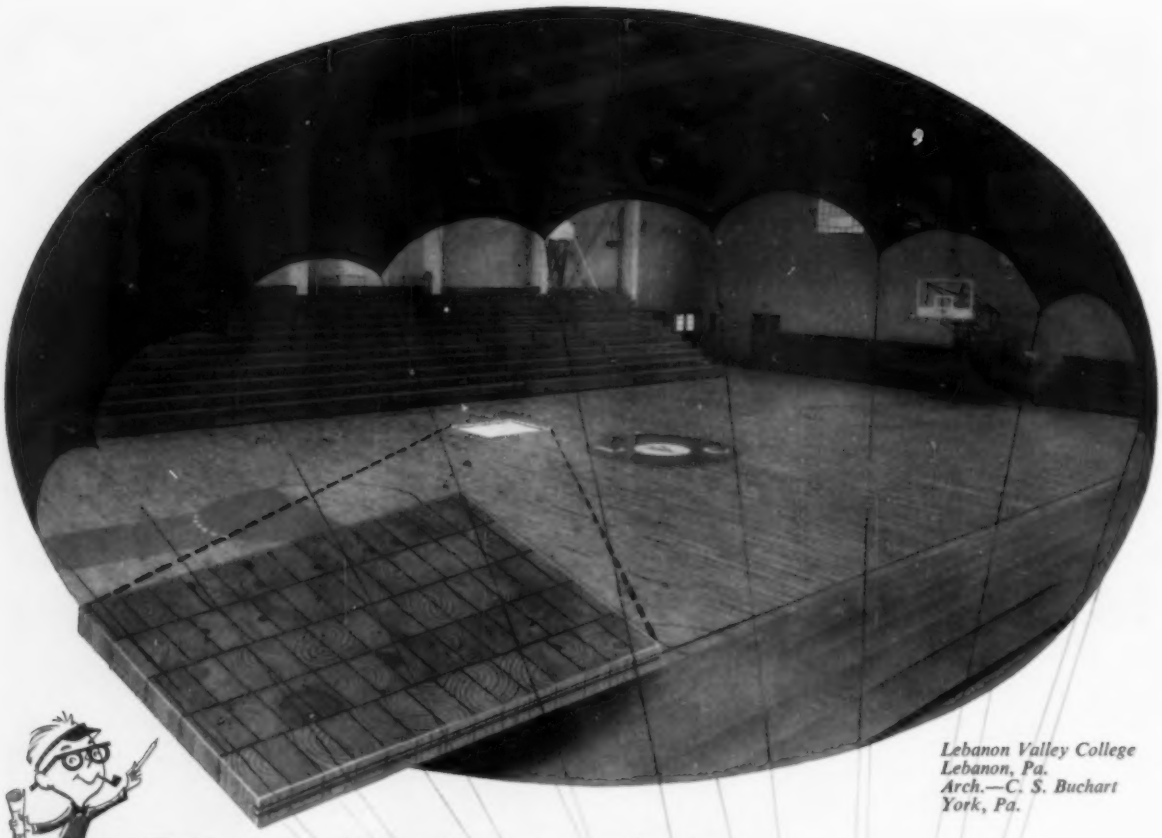

*Lebanon Valley College*
*Lebanon, Pa.*
*Arch.—C. S. Buchart*
*York, Pa.*

## Take a tip from the guy who knows:

## WHERE SCHOOL FLOORS GET A "WORKOUT" INSTALL *resilient* KREOLITE!

Pounding feet and hammering equipment give school gymnasiums, vocational shops and laboratories a continual "workout". Normal flooring materials just can't take this punishment!

That's why so many architects, school boards and school executives are installing Kreolite Flexible Strip End Grain Wood Block Flooring in these school areas. Kreolite Flooring can *really* take it!

The reason is that Kreolite Flooring's durable end grain construction is designed to stand up under constant abuse and yet, retain its natural beauty. And, in addition, Kreolite Flooring is economical to install, resilient, splinter-proof and easy to maintain!

Where beauty *and* durability in school flooring are essential, install Kreolite Flooring. For complete details, mail the coupon below.

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**KREOLITE FLEXIBLE STRIP END GRAIN WOOD BLOCK FLOORS**

Please send me a free sample and complete specifications of Kreolite Flexible Strip End Grain Wood Block Flooring.

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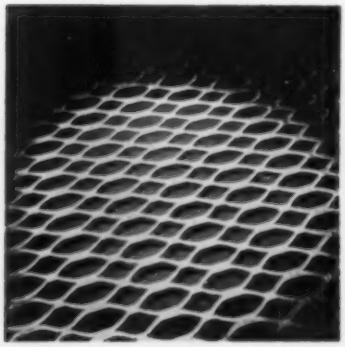
# p/a products

*For existing homes with central heating plants, principal problems are to provide equipment that owners' can afford and to make installations without major structural renovations. Flexi-Cool air conditioners* (below), *designed and engineered on "building-block, add-on principle," may be installed horizontally or vertically; part in one location, part in another—the two connected by wiring and tubing. Practically all design requirements can be accommodated. Worthington Corp., Harrison, N.J.*

*New, nailable, 10" steel joist has recently been added to the framing line of Stran-Steel Corp. Early use of this new product was in Alfred Levitt apartment project in New York* (above). *Because of zoning-height restrictions in that area, use of conventional 12" joists would have permitted buildings of only seven stories. New joists helped to allow additional story. Stran-Steel Corp., Ecorse, Detroit 29, Mich.*

*Modular wall units* (below) *are factory assembled and shipped to site complete with insulated panels, operable sash, and doors. Interlocking split-mullion design provides for horizontal expansion and contraction, and also simplifies erection. Narrow-stile aluminum or flush doors are featured. Kawneer Co., Niles, Mich.*

*Airtherm LL's—long-span heavier sections* (below)*—have same depth and rib-opening width as standard sections. When long-span sections increase depth and rib opening over standard sections, different roof levels result and construction and maintenance costs go up, nullifying savings of fewer joists and purlins. Also, heavier insulation is required to bridge openings, extra labor is needed to fill in the low areas, and more time and materials are needed to insulate and cover perpendicular wall saddles. LL sections eliminate these extra costs and sources of potential trouble. Airtherm Mfg. Co., 700 S. Spring, St. Louis 10, Mo.*



*One of four new "three-dimensional" patterns in expanded metals now available from U.S.G.* (left). *Architects and designers will find these advanced patterns desirable for portable and fixed screens, room dividers, book shelves, grilles, partitions, etc. New patterns are available in carbon steel, aluminum, and —in some meshes—stainless steel. United States Gypsum Co., 300 W. Adams St., Chicago 6, Ill.*

**Beautiful Ador Custom Handle** *adds distinctive note of luxury. Ador doors are found in all types of construction — from project homes to luxurious custom residences.*

**$10,000 Project Home** offers owners indoor-outdoor living with competitively-priced Ador sliding glass door.

**$20,000 Custom Residence** on the coast has beautiful alumilited all-aluminum sliding units by Ad

# Luxury Look of Sliding Glass Doors Sells Buyers in '56 market

*More luxury* is the home buyer's greatest demand. It is the home builder's key sales secret. Foremost among "demand extras" are sliding glass doors.

Every day more and more Americans are buying homes that offer the luxury of indoor-outdoor living provided by sliding glass doors. These buyers judge the sliding glass door by the quality and appearance of its handle.

Outstanding in the field is the distinctive custom hardware on Ador sliding glass doors. The beautiful lucite grip handle, with its luxurious satin-silver finish, is an appealing sales argument for the home buyer.

Good design is a characteristic of the Ador door. Custom details include snap-on glazing bead for finished glass lines; rigid, tubular aluminum design; and a lustrous alumilite finish which resists corrosion indefinitely.

Custom hardware is another example of Ador's design leadership. Yet, with all these custom features, Ador units are priced to meet competitive conditions.
For information and specifications, write to Ador Sales, Inc.,
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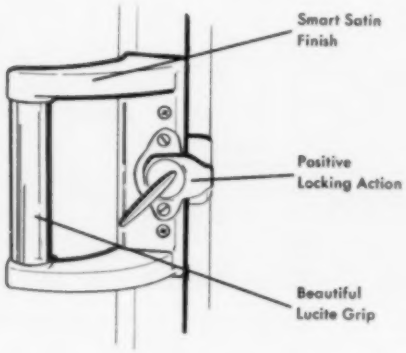



**Ador Hardware Design**

**Striking Custom Design Hardware** is this Ador handle here being examined by builder John Pagliuso. This beautiful precision hardware is distinctive detail of the Ador door.

**$50,000 Luxury House** features ninety-seven feet of Ador sliding glass doors opening on a patio-pool area.

*Ador*

**America's Foremost**
**All-Aluminum Sliding Glass Door**

# p/a products

(Continued from page 171)

### air and temperature control

**Induction UniTrane:** room unit—for high-velocity air-conditioning systems—is designed to give perimeter heating and cooling in multiroom, multistory buildings. Unit features tandem arrangement of primary-air jets to provide multistage induction of secondary air; smooth-plastic nozzles are shaped to minimize noise and discourage dust deposits. Conditioner also includes filtering for both primary and secondary air; induced air is cleaned by standard one-in. throw-away filter. Eight basic capacity arrangements—in steel cabinet or concealed installation—deliver from 30 to 120 cfm of primary air; all units are equipped with reversible heating/cooling coil. The Trane Co., La Crosse, Wis.

**Weather-Selector Unit:** year-round temperature-control system for small, basementless homes, fits into 33″ x 41½″ closet. Heavy-duty, gas-fired furnace with automatic controls, heats and filters air; cooling section (with air-cooled condensing unit located outdoors) utilizes furnace duct system and fan to cool, filter, and dehumidify air. For architects' and builders' convenience, manufacturer supplies blueprints giving required size and construction of closet as well as placement of ducts and piping. System has heating capacity of 76,000 Btu/hr; three-ton cooling capacity. Typhoon Air Conditioning Co., Inc., 505 Carroll St., Brooklyn 15, N. Y.

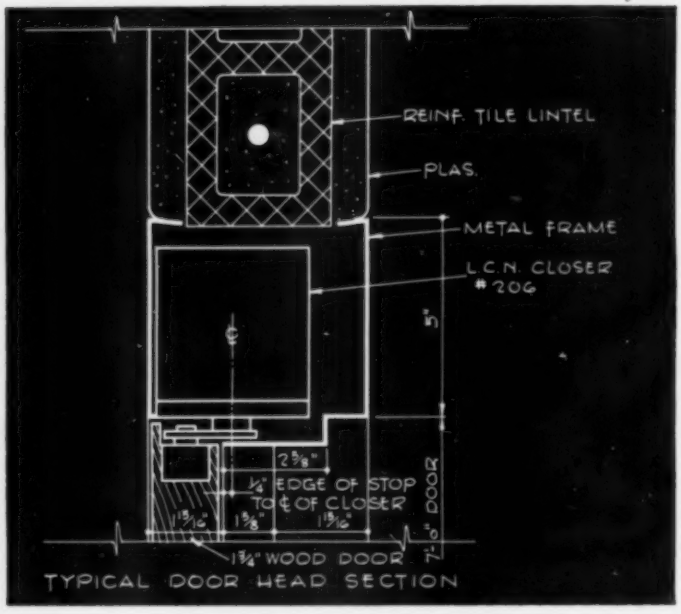
### construction

**Shure-Set Manual Fastening Tool:** new manually operated tool—for fastening into concrete, masonry, and steel—expedites light fastening work which cannot be done by hammer and nails, yet does not require force of powder-actuated tools. Device is based on principle that sufficient support of fastening pin utilizes maximum energy in hammer blow. Broad base of tool assures right-angle contact with working surface and prevents damage from hammer blows; guard at top protects worker's fingers from hammer. Special fasteners, with maximum toughness and hardness, have been developed for new tool; drive pins range from ¾″ to 3″ in length, while threaded studs are from ⅜″ to ⅝″ long. Ramset Corp., 12117 Berea Rd., Cleveland 11, Ohio.

**"Titeflex 500" Tubing:** low-cost, lightweight tubing is useful for many construction jobs. Manufactured by European process, tubing is formed by winding thin, lead-coated-steel strips into tube of desired diameter; tubing has smooth interior bore and helical exterior ridges. Besides being suitable as conduit for electrical wiring or communications cables, tubing is also said to be ideal as duct for stressing cables used in prestressed-concrete construction. Tubing is available in seven sizes; weights range from .11 lb/ft for ⅞″ ID to .26 lb/ft for 2″. Titeflex, Inc., 10 Hendee St., Springfield, Mass.

**Alumadek Metal Roofing:** roof-deck system features special fastening clip to speed and simplify erection. Roofing system utilizes high-strength, ribbed-aluminum panels attached to precision-aligned, zinc-plated-steel subpurlins; self-expanding fastener, which locks into purlins, holds decking firmly in place. Metal Decking Corp., 11 E. 16th St., Indianapolis, Ind.

(Continued on page 178)


## CONSTRUCTION DETAILS

**for LCN Overhead Concealed Door Closer Shown on Opposite Page**

*The LCN Series 200 Closer's Main Points:*

1. Efficient, full rack-and-pinion, two-speed control of the door
2. Mechanism entirely concealed; arm disappears into door stop on closing
3. Hydraulic back-check prevents door's being thrown open violently to damage walls, furniture, door, hinges, etc. Door may open 180°, jamb permitting
4. Hold-open (optional) set at any one of following points: 85°, 90°, 100° or 110°
5. Easy to regulate without removing any part
6. Used with either wood or metal doors and frames.

*Complete Catalog on Request—No Obligation*
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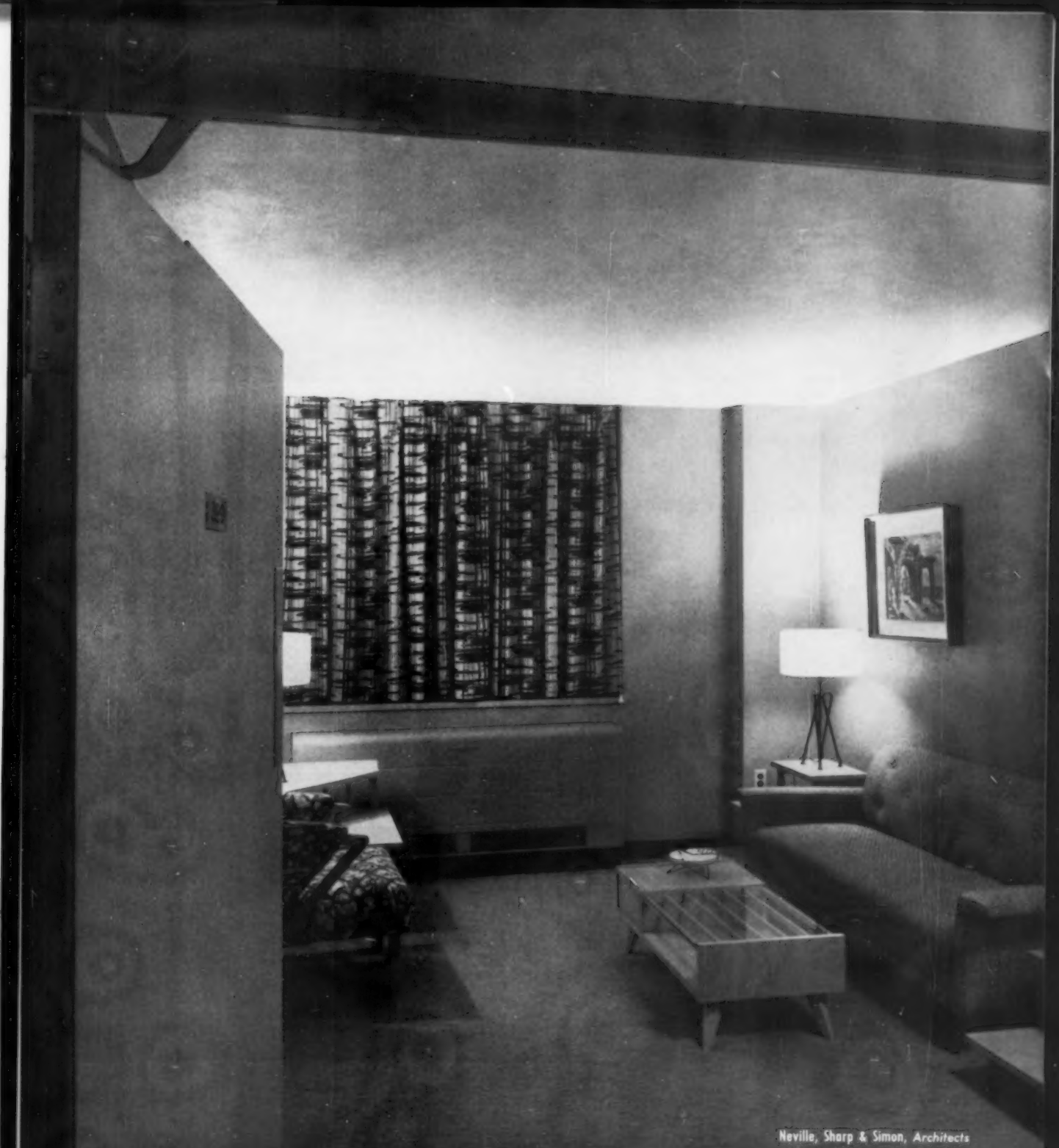
**LCN CLOSERS, INC., PRINCETON, ILLINOIS**



Neville, Sharp & Simon, *Architects*

## MODERN DOOR CONTROL BY *LCN* · CLOSER CONCEALED IN HEAD FRAME

*JANE G. PHILLIPS MEMORIAL HOSPITAL, BARTLESVILLE, OKLAHOMA*

LCN CLOSERS, INC., PRINCETON, ILLINOIS

*Construction Details on Opposite Page*

BELLE RYAN GRADE SCHOOL
Truscon Intermediate Classroom Windows
Leo A. Daly Co., architects.
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Steele, Sandham and Steele, architects.
H. W. Stitt Construction Co., contractors.

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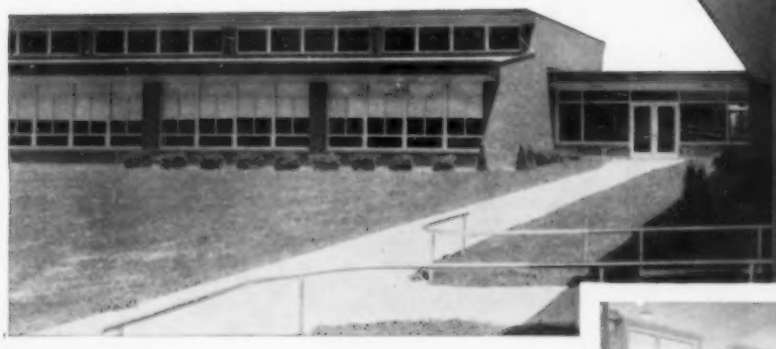
JEFFERSON SCHOOL
Truscon Intermediate Projected Steel Windows
Steele, Sandham and Steele, architects.
Parsons Construction Co., contractors.

# WINDOWS
## Omaha schools



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## p/a products

(Continued from page 174)

### electrical equipment, lighting

**Mercury-Vapor Lamps:** development of two new mercury-vapor lamps has stimulated ideas for greater night-time traffic safety. "Golden" lamp—said to surpass any previous light source in efficiency and direction control—could be used at critical intersections, curves, and crossings to act as warning signal. "Silver-White"—color-corrected mercury-vapor lamp—might be used on intervening stretches of highway; new type of phosphor bulb coating used to produce silver-white appearance is also claimed to offer more light than clear mercury-vapor lamps, rather than less. Sylvania Electric Products Inc., 1740 Broadway, New York 19, N. Y.

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**Insulation for Steel Framing:** multiple-layer aluminum insulation is now manufactured in extra-wide sizes to accommodate greater steel-framing spans. Insulation will span 24", 30", 48", 60", and wider spaces between steel studs, joists, and beams; in addition, material is available in lengths up to 750' to permit unbroken barrier to heat and vapor flow. Special clips, developed for use with steel framing, eliminate need of wood furring strips to secure flanges of insulation. Infra Insulation Inc., 525 Broadway, New York 12, N. Y.

### surfacing materials

**Masonite Ridgegroove:** new striated pattern has been added to line of hardboard surfacing materials. Wood hardboard paneling, impregnated with special tempering compound, combines vertical grooves, 4" apart, with all-over striated texture; shiplap joint treatment forms groove that matches pattern. Designed primarily for exterior applications, paneling is also suitable for interior paneled walls; 5/16" thick hardboard can be painted or stained. Masonite Corp., 111 W. Washington St., Chicago 2, Ill.

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### books received

**The Changing Shape of Metropolitan America.** Amos H. Hawley. The Free Press, Glencoe, Ill., 1956. 177 pp., illus., $4

**Church Building and Furnishing.** J. B. O'Connell. University of Notre Dame Press, Notre Dame, Ind., 1956. 264 pp., 44 plates, $5.50.

**Architectural Construction.** Theodore Crane. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y., 1956. 433 pp., illus., $10.

**Max Bill.** Tomás Maldonado. Nueva Vision S.R.L., Cerrito 1371, Buenos Aires, Argentina, 1955. Distributed in U. S. by Wittenborn & Co., 38 E. 57 St., New York 22, N. Y. 148 pp., illus., $7

**Manual of Appraisals.** E. H. Boeckh & Associates, 1406 M St. N.W., Washington 5, D.C., 1956. 839 pp., illus., $18

**La Vie Des Monuments Francais.** Paul Leon. A. & J. Picard & Cie, 82 Rue Bonaparte, Paris, France, 1956. 556 pp., illus., 3750 fr.

**Make-It-Yourself Furniture.** Jeffrey H. Livingstone. McGraw-Hill Book Co., Inc., 330 W. 42 St., New York 36, N. Y., 1956. 106 pp., illus., $4.50.

### fresh evaluation

**Wren And His Place In European Architecture.** *Eduard Sekler. The MacMillan Company, 60 Fifth Ave., New York 11, N. Y., 1956. 297 pp., illus., $12*

Since James Elmes published the first full-length study of Christopher Wren in 1823, on the centenary of Wren's death, many publications concerning that architect have appeared, including the monumental volumes of the Wren Society. The present book offers a new approach. The author, an Austrian architectural historian who spent two years in England as a British Council Scholar, has tried to evaluate Wren's place in 17th Century architecture.

There is no doubt about Wren's preeminence in England, but the questions raised are: how does Wren's work compare with that of his contemporaries on the continent who designed the great Baroque buildings of the period, and how great was his influence? The last chapter attempts to give the answer and on the last page the summing up is "... Wren's right to a place in the ranks of European architects of more than national importance can only be based on his church architecture, where he did create something new and unique."

Sekler's book is very readable. Chapter III, "Wren as a Town Planner," is one of the most interesting. The bibliography is well arranged. It is divided into seven sections: a chronological listing of biographies of Wren; general reference works; biographies of Wren's English contemporaries (we wish that the biographies of the European contemporaries had also been listed); Wren as a town planner; Wren's churches; St. Paul's; secular buildings.

The illustrations of buildings are excellent and some of the reproductions of drawings, of which there are a great many. The Whitehall

(Continued on page 182)


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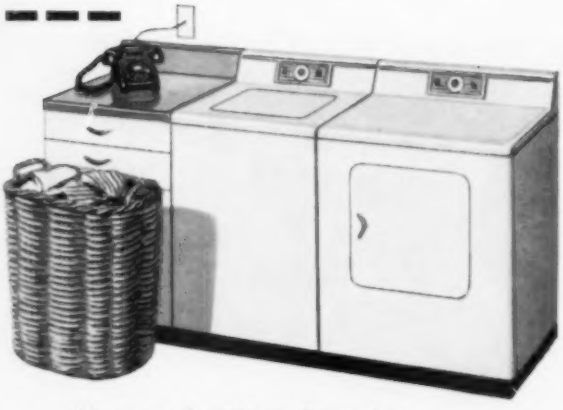

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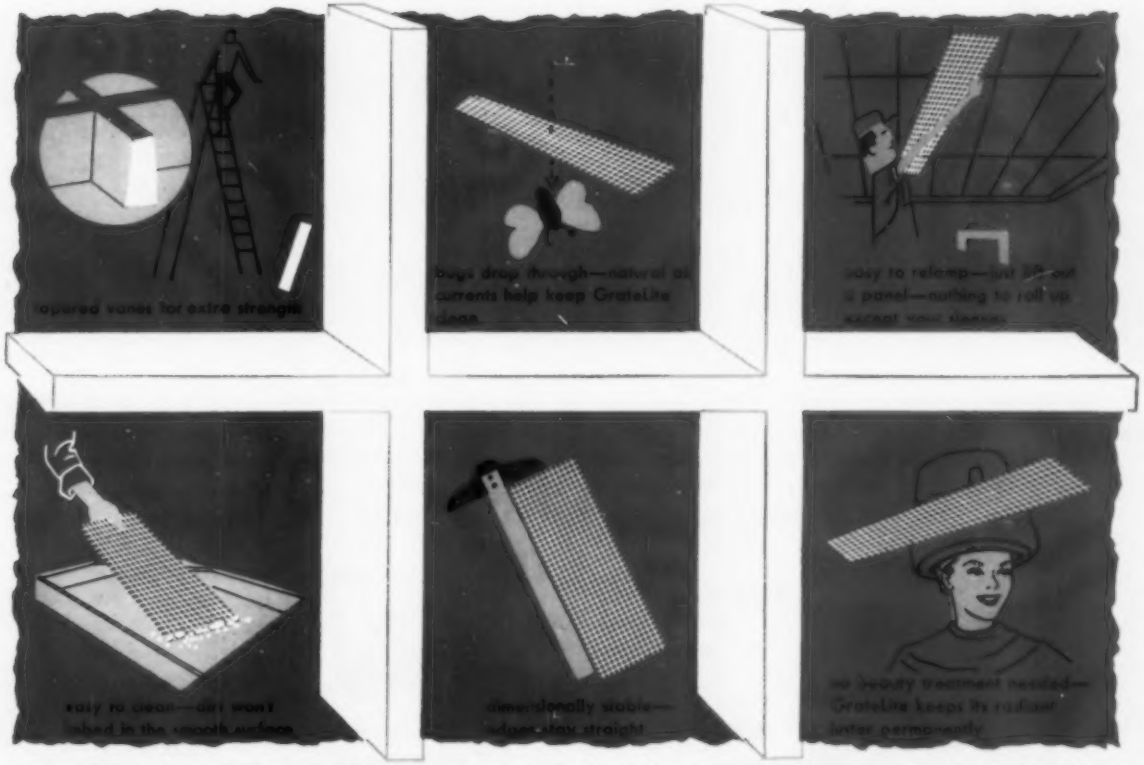
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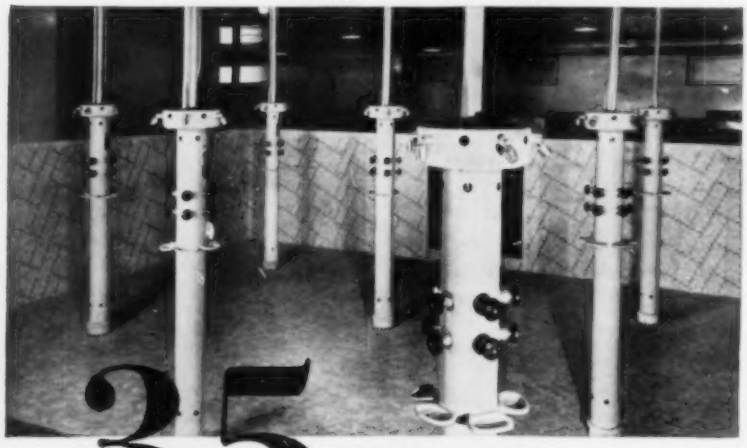
(Continued from page 179)

projects (Plates 60-61) are not clear enough to be informative. The most instructive illustration is Figure 17, a two-page spread, on which are small-scale sketches of 52 Wren spires, drawn by Gerald Cobb and arranged according to types which range from a simple rectangle through the varying forms of Baroque cupolas to a late Gothic flèche with ogee arch and pinnacles.

This is an urbane book which stimulates thought—and, so, is a most welcome addition to writings on Christopher Wren.

AGNES ADDISON GILCHRIST

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**planetary phenomenon**

**Modern Office Buildings.** *Michael Rosenauer. B. T. Batsford, Ltd., 4 Fitzhardinge St., London W. I., England, 1955. 163 pp., illus., 35s.*

Looking through a volume so well bethought as this one stimulates the imagination despite a colorless title The illustrations—ranging from Stockholm to Dallas to Rio—engender a sense of urgency, as if some vigorous upshot species were forcing its way into being at populous centers on every continent. The fact that this efflorescence began in the United States, and is still most abundant here, no longer serves to classify the office building as an "American" concept. It is now a planetary phenomenon: as such, its various examples, no matter where located, have problems in common.

To begin with, evolution in planning and design of commercial buildings is seen by Rosenauer as rooted in two factors—a search for maximum economy in structural methods, and a growing awareness of healthful environment. From these challenging stems, he maintains, the style of our period evolves. Specifically, laments the author, in hardly any period has architectural style been more misunderstood than today. "Fashion is *not* style. Fashions have sprung into being in all periods" and they may constitute "a testing ground for new ideas. Where there are no ideas behind them other than the wish for a glamorous individuality without constructional" reason for being, fashions interfere with style itself, which implies continuity of development.

Unfashionable, yet appropriate as to style, is Henry Moore's sculptural screen of remotely totemesque feeling, sole ornament of Rosenauer's TIME & LIFE Building in the heart of London.

The author finds office-building style firmly based on structure. The first step toward economy of construction was made when loadbearing walls were replaced by a skeleton in steel or reinforced concrete supporting story-high masonry

(Continued on page 188)

Photo by Hedrich-Blessing. Furniture by M. Singer & Sons.

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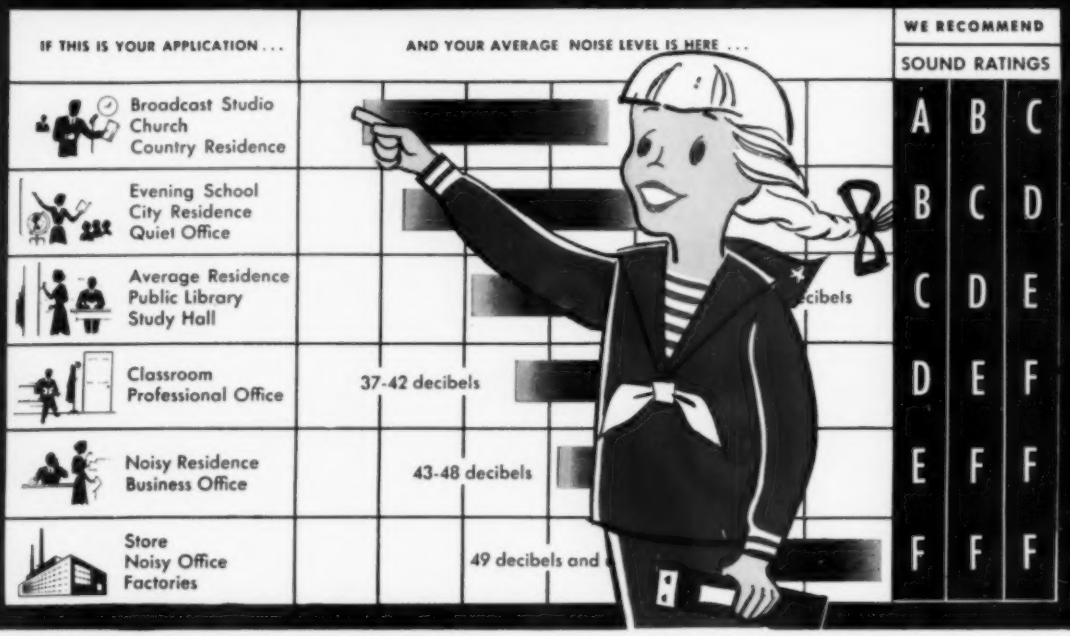


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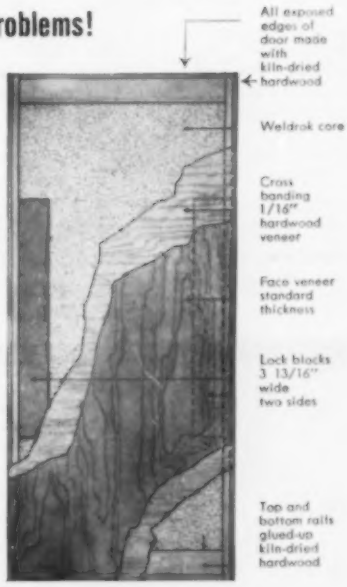
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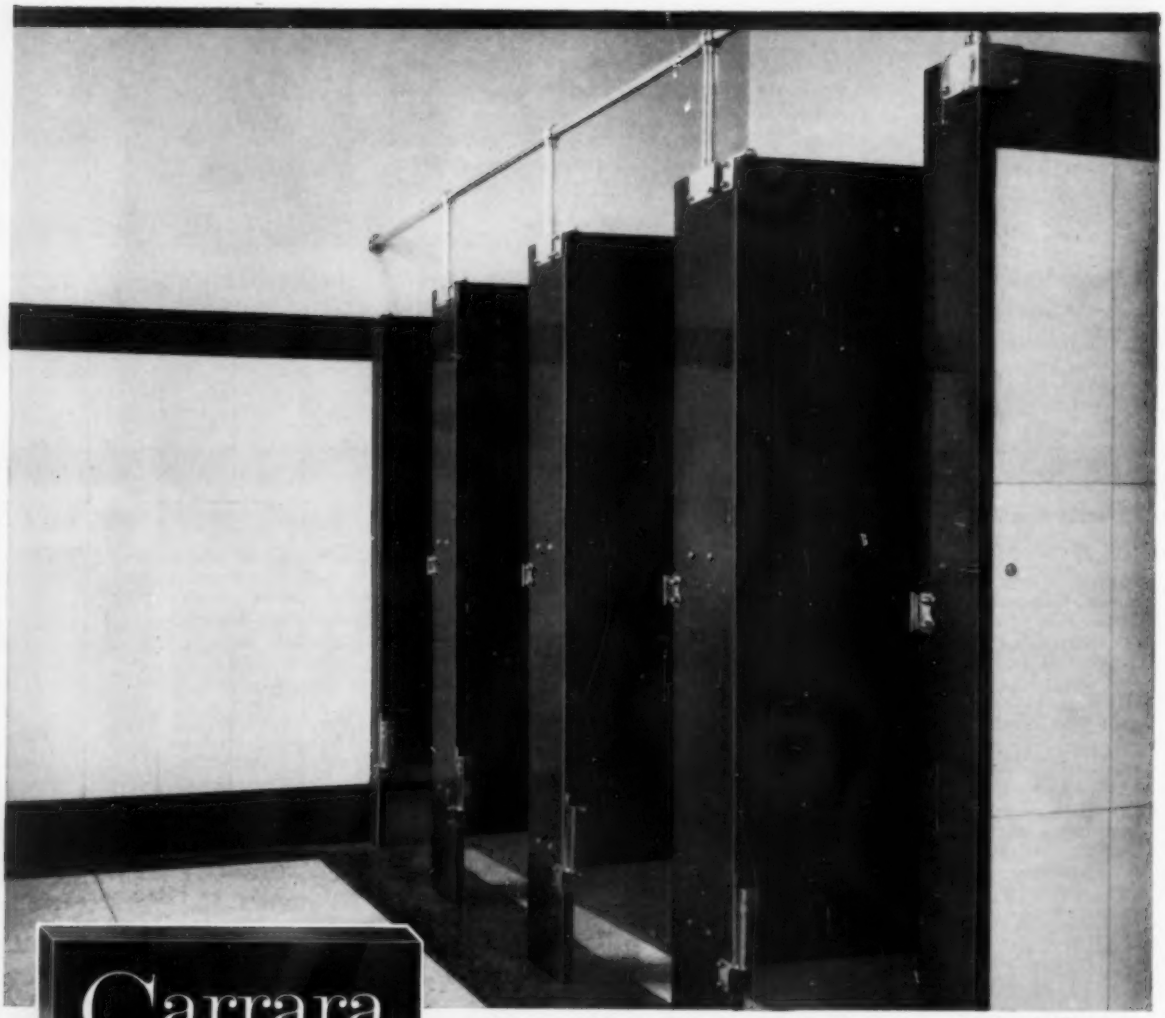

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# A System Designer's DREAM

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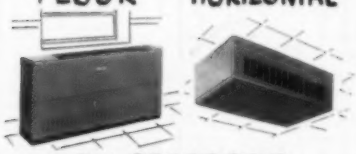

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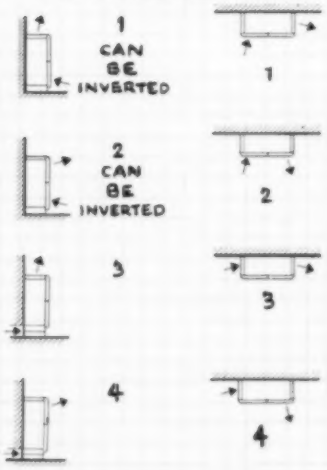


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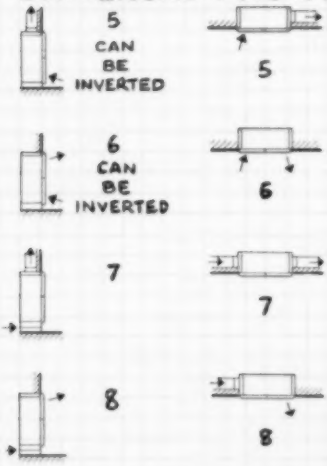
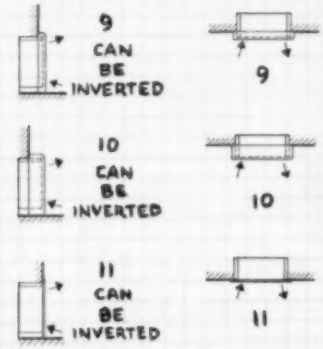



SEMI-AND FULLY-RECESSED FRONTS

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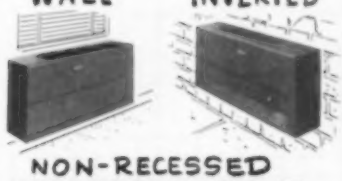

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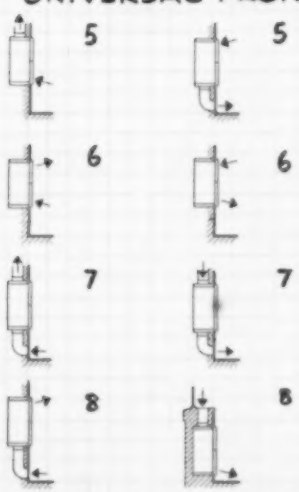


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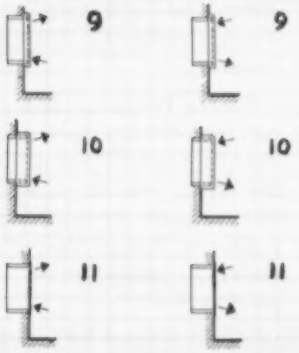


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## reviews

(Continued from page 182)

panels. As a second step, materials used both in loadbearing and in panel wall were replaced by materials lighter in weight "yet reliable for their function of protecting indoor space from ever varying outside conditions." Noncarrying wall elements are changing "an antiquated process of building" into a prefabricated assembly process.

So much for Rosenauer's structural thesis—with which, we venture, few will disagree. Nor will many professional voices be raised in protest when he avers that healthful working conditions will normally become a "must" for future planning. Comparative analysis of initial building costs, healthwise, and of clerical output, he contends, proves that the aggregate of such costs and resultant running expenses is "infinitesimal" in relation to production loss caused by fatigue due to poor working environment. Good conditions "depend on light and air." Whereas adequate daylight and ventilation can be had only in limited working space near large windows, artificial illumination and air conditioning permit the architect "to simulate a predetermined and artificial climate" throughout indoor spaces.

One of the soundest and clearest definitions we have seen lately in respect to modern architecture's basic aim serves as pivot for the initial chapter and, in fact, for the whole book: "Our period is directed by an esthetic feeling which will accept a solution as right only when no more direct and simple approach can be envisaged."

To this the author adds: "Enrichment through sculptural features and ornamentation enters in time, as it did in all periods of architecture. The problem for the architect is similar to that of the sculptor who models a draped figure. Unless he masters the correct interpretation

(Continued on page 194)

THE CEILING: FORESTONE

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Architect:
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Contractor:
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Acoustical Contractor:
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Coast Insulating Products, Los Angeles
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John K. Haas Company, San Diego
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**IDAHO**
Fiberglas Engineering & Supply, Boise
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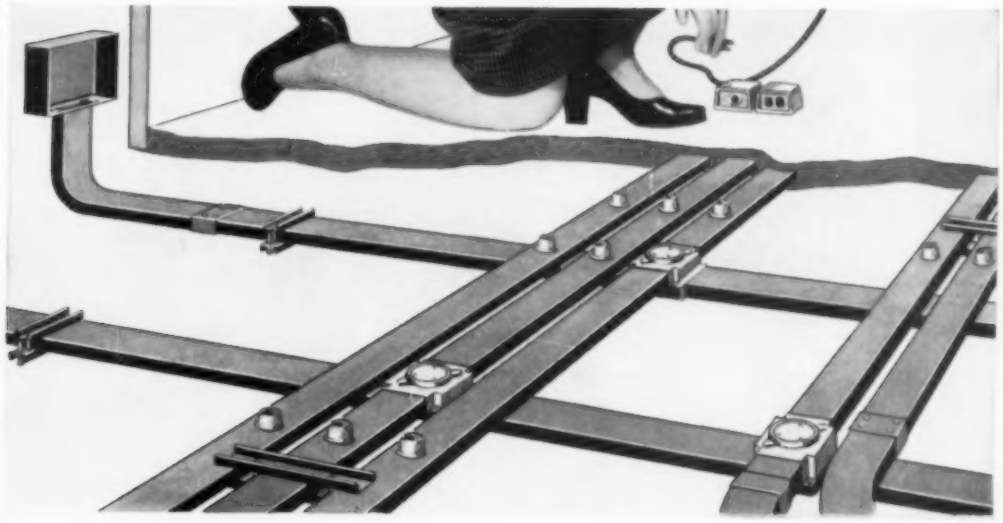
Determine which of the three systems shown at the right is best suited to solve your power distribution problems now and in the future. For complete details, get in touch with your nearest General Electric Construction Materials district office or write Section C67-868, Construction Materials Division, General Electric Co., Bridgeport 2, Conn.

# General Electric underfloor wiring—3 SYSTEMS



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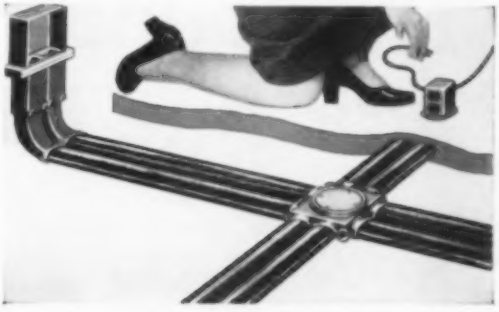
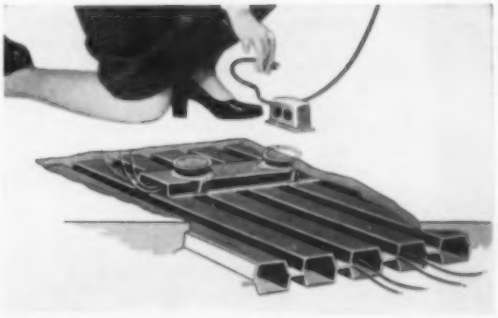
## 2. for single-level distribution—General Electric Fiberduct

Here's a widely accepted underfloor electrical raceway system that provides a good distribution of electrical outlets for many office operations. Yet the cost is low because Fiberduct is made of a strong, yet inexpensive, fibrous compound that can be sawed and fitted easily.



## 3. for cellular construction—General Electric Q-Floor wiring

Q-Floor wiring is designed for installation in cellular steel subflooring. It makes it possible to convert every cell into a raceway . . . makes every square foot of floor available for present and future electrical use. No costly alterations, no litter, no tie-up of space or lengthy interruption of office routine, no matter how much or how often your electrical requirements change.



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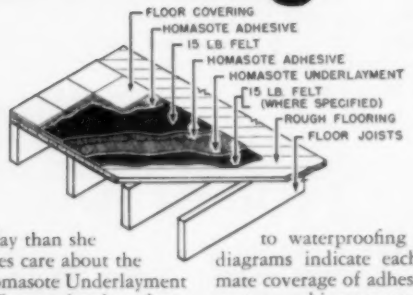
## —with a special bonus for the housewife




The housewife takes more steps in a day than she would care to know about. But she does care about the comfort of walking on a floor using Homasote Underlayment — she can *feel* the difference. The difference has long been known by hotels; for many years hotel designers have specified Homasote as the ideal foundation for all quality floor coverings except cork — and especially for wall-to-wall carpeting. Homasote Underlayment is still the only major innovation in flooring today.

Actual use of Homasote Underlayment with top quality floor coverings has demonstrated its reliability again and again. The "soft" Homasote floor does not dent appreciably more than any combination of other underlayments and quality floor coverings.

Applied directly over sub-flooring, Homasote Underlayment is installed simply and economically — particularly when you have the **know-how** of the Homasote Handbook. All the needed materials are specified, from ring drive nails to waterproofing formulations for concrete. Accurate diagrams indicate each step of application. The approximate coverage of adhesives is estimated. Special nails to prevent squeaking are recommended. Careful consideration is given to the problem of expansion, and there is a simple explanation of why Homasote Adhesive helps to prevent cracking of the floor surface.

This wealth of detail is just one more example of the **know-how** of the Homasote Handbook — and Underlayment is only one subject so thoroughly handled. The new, revised Handbook has answers to 100 construction problems — all right answers, backed by more than 46 years' experience in the making of quality products. We are proud of this book, and have confidence in its basic value to every architect, builder, and dealer. May we send you a copy, without cost or obligation? Kindly address your inquiry to Department H-8.

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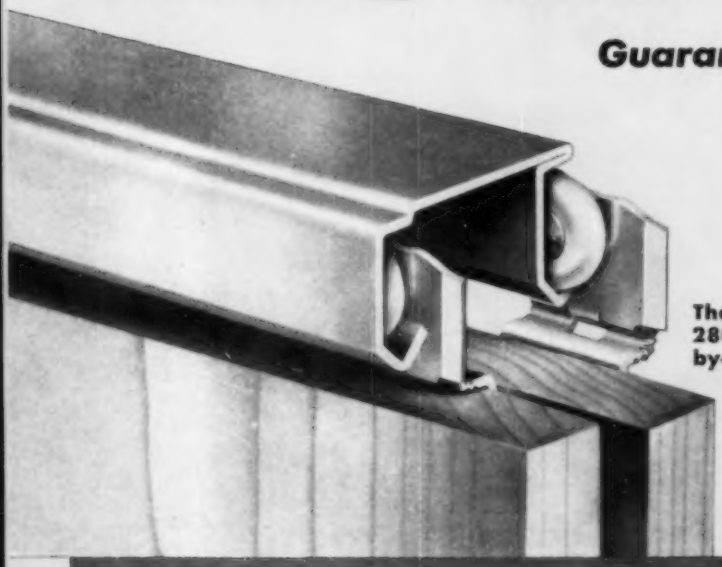
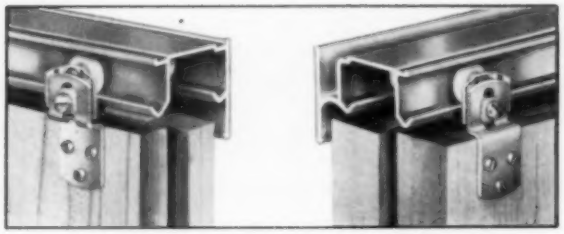
***Guarantee builders fast, labor-saving installation and permanent, trouble free operation***



**The sensational Stanley 2800 for ¾" and 1⅜" by-passing doors.**

**Revolutionary dual purpose hanger.**

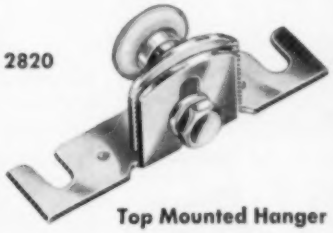
## Companion Sets to the 2800



**2804** **2808**

Two sets with built-in header trim and facia, save extra labor of installing separate trim. Same unique hanger as the Stanley 2800's, with it's ⅜" vertical adjustment and lock-in-place features. Specify 2804 for ¾" doors, 2808 for 1⅜" doors.

**2820**



**Top Mounted Hanger**

Here is Stanley's new set for single door in pocket. Track is applied directly against header. Top-mounted hanger permits up to ½" vertical adjustment.

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Builders can make up to ⅜" vertical adjustments without loosening the three door screws . . . save valuable time on every installation. No other hanger will adjust so freely and quickly! Doors can be lifted on and off jump-proof tracks without removing hangers from doors.

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The serrated edges on this unique hanger lock doors permanently in place — within 1/16" exactness. Doors will not slip!

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Permanently lubricated nylon wheels glide smoothly across V-shaped steel tracks that have been press-formed for perfect straightness, Bonderized for corrosion resistance. Heavy gauge steel hangers are electro zinc plated.

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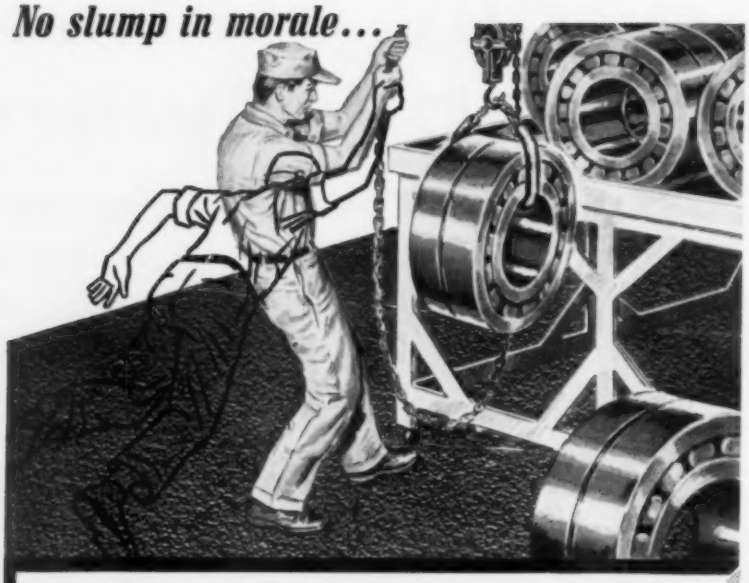

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With patented ALGRIP underfoot, men work confidently in dangerous slipping areas—spend more time concentrating on their jobs . . .

. . . and management gets a triple advantage—improved morale, reduced accident rates and slashed insurance costs . . .

because—neither oil, water nor grease can reduce the powerful friction-grip action of ALGRIP's uniformly embedded abrasive particles. Easily fabricated ALGRIP—it can be overlaid or used as a complete flooring—is tough steel plate into which a grinding-wheel type abrasive has been rolled—*not coated*—to a controlled depth as an integral part of the steel. Wear and tear merely expose more abrasive.

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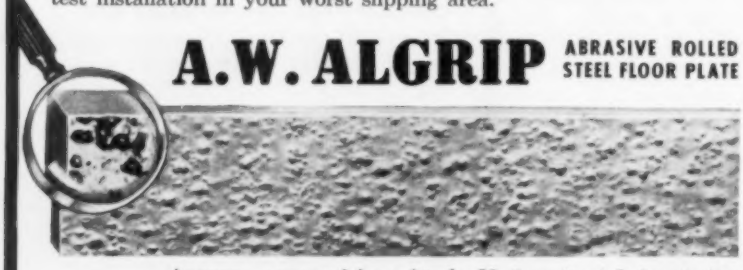

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## reviews

(Continued from page 188)

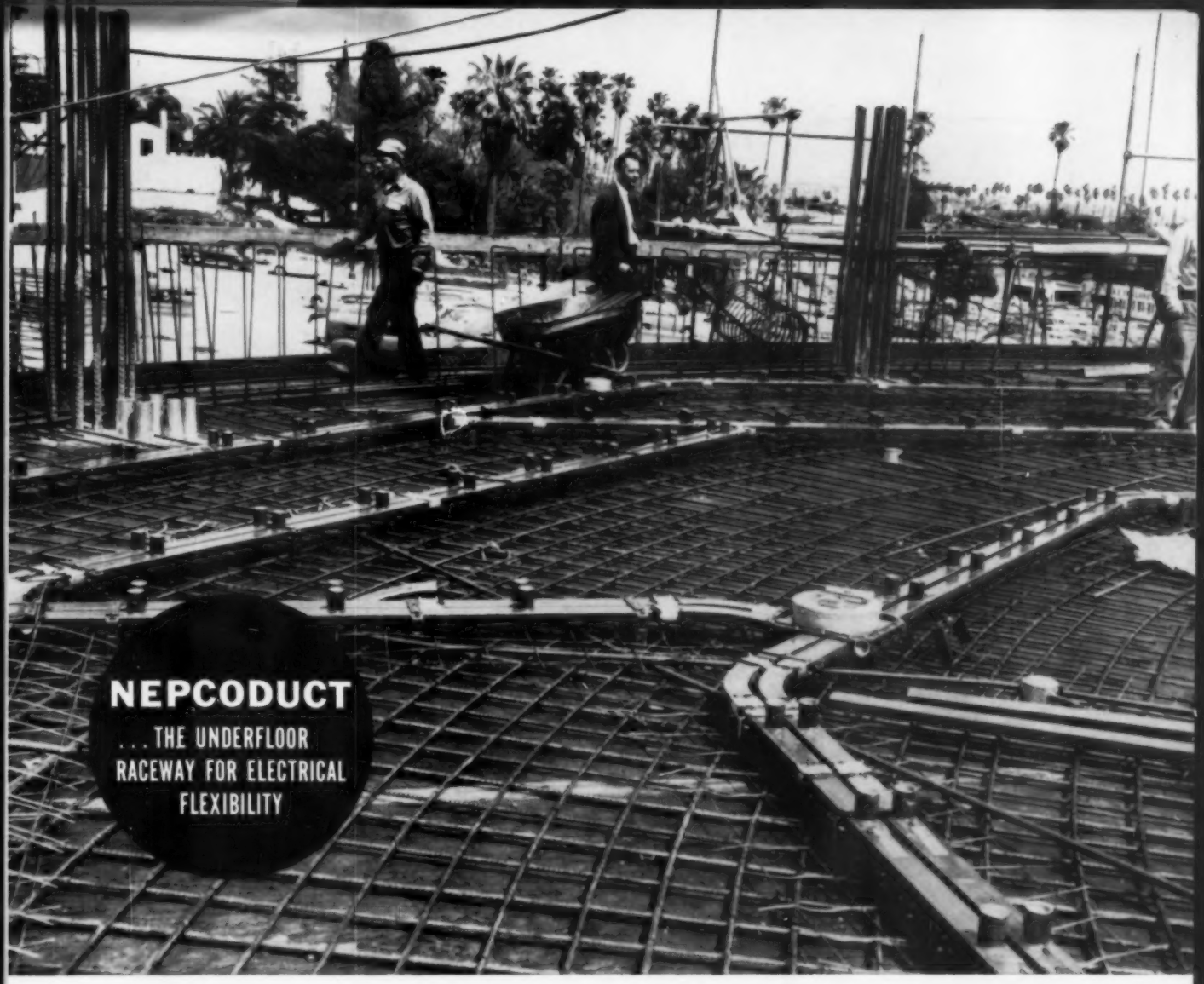
or function" of the nude, his draperies will but emphasize the figure's shortcomings.

Our distinguished author joins Raymond Hood in proclaiming that the day of one-man architecture has passed. Particularly is this true in the case of office buildings. There the prime intention is capital investment and the architect surrounds himself with a "team" of financial and technical experts. He is most happy when clients wish to establish by means of a new building an expressive representation of their importance. This directs the planning into channels different from those appurtenant to a renting proposition. Such clients challenge the architect's skill to portray their particular activity in his design and afford him a wider margin for the use of imagination.

A large proportion of the book is devoted to matters of technical equipment. The chapter on "Mechanical Services" is ample, and treats of such variety as space-heating, radiators and convectors, low-temperature radiant panels, plenum heating, air conditioning, hot, cold, and drinking water, gas supply, sanitary installation in all its phases, drainage from basements, and underground car parks. On the other hand, one might wish for a fuller treatment of other chapters—zoning and orientation, planning approach and procedure, fenestration, vertical traffic-ways, catering facilities, internal partitions and finishings, plus a more extended setting forth of "style." In addition, more space might have been given to critical analysis of specific examples, without unduly crowding the sparse effect of the volume's 163 pages. The author stands so high in the profession and his grasp of the subject is so plainly adequate, that the reader desires more of his opinions.

WILLIAM HURD HILLYER

(Continued on page 196)

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National Electric Nepcoduct is providing efficient, flexible electrical distribution in Capitol Records' new round office building at Hollywood, California.

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Versatile in application, Nepcoduct makes outlets available at the floor surface wherever they are needed regardless of office layout.

Nepcoduct is quick and economical to install in any type floor construction. It can be used as a single, double or triple duct system to provide separate wiring facilities for light and power, inter-communication and telephone.

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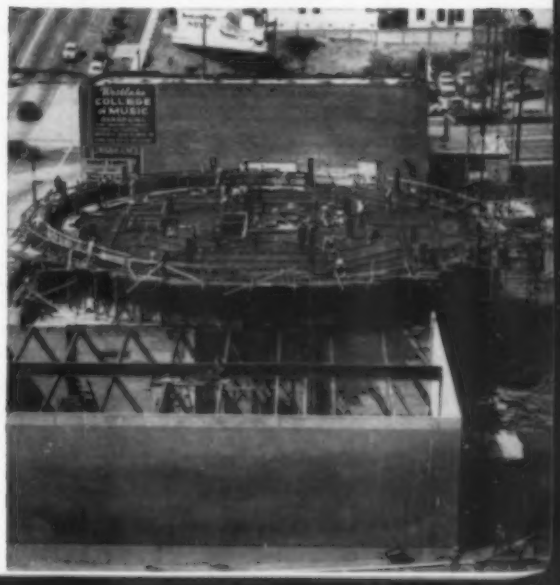

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# reviews

(Continued from page 194)

**valued together**

**From School Program to School Plant.** *John H. Herrick, Ralph D. McLeary, Wilfred F. Clapp, Walter F. Bogner, Henry Holt & Co., 383 Madison Ave., New York 17, N. Y., 1956. 482 pp., illus., $5.50*

**Schools For The New Needs.** *F. W. Dodge Corp., 119 W. 40 St., New York 18, N. Y., 1956. 312 pp., illus., $9.75*

These two books, in combination, offer a well-rounded study of school building problems and their solutions. The one book very ably supplies what the other lacks.

The first, *From School Program to School Plant*, is well named; it describes in detail all the steps from program to finished plant. A diversity of viewpoints is represented: three of the co-authors are from the school teaching and administration field; the fourth is an architect and architectural professor. The text is a thorough treatment of the whole subject of school building design and construction. The information has been thoughtfully assembled and is skilfully presented. The discussion is comprehensive, competent, and remarkably complete. It is slanted toward the needs of the school administrator and school boards. Its illustrations are few.

Illustrations in abundance are supplied by the book named second. These, together with the wording of the book, have been reproduced from the pages of issues of recent years of *Architectural Record*. The theme and spirit of the book are set by *Record*'s Frank G. Lopez in a thought-provoking Introduction.

A study of school-building costs, and a review of the design of various school types, precede the presentation with illustrations and description of over 30 elementary schools and 20 secondary schools. The treatment of each is in the usual

(Continued on page 198)

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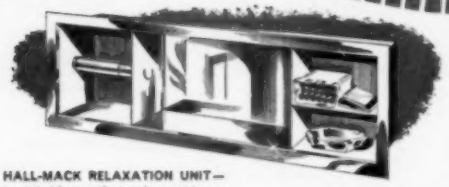

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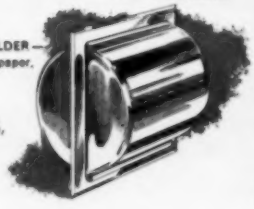

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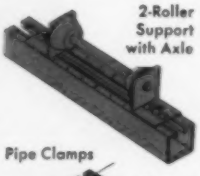


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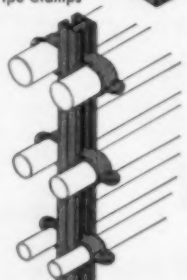

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## reviews

(Continued from page 196)

manner of the magazine in which they originally appeared.

Many of these case studies vividly document the theories of the first book. Readers involved or merely interested in the planning, design, construction, or administration of school buildings will derive profit from either or both of these books.

LAWRENCE E. MAWN

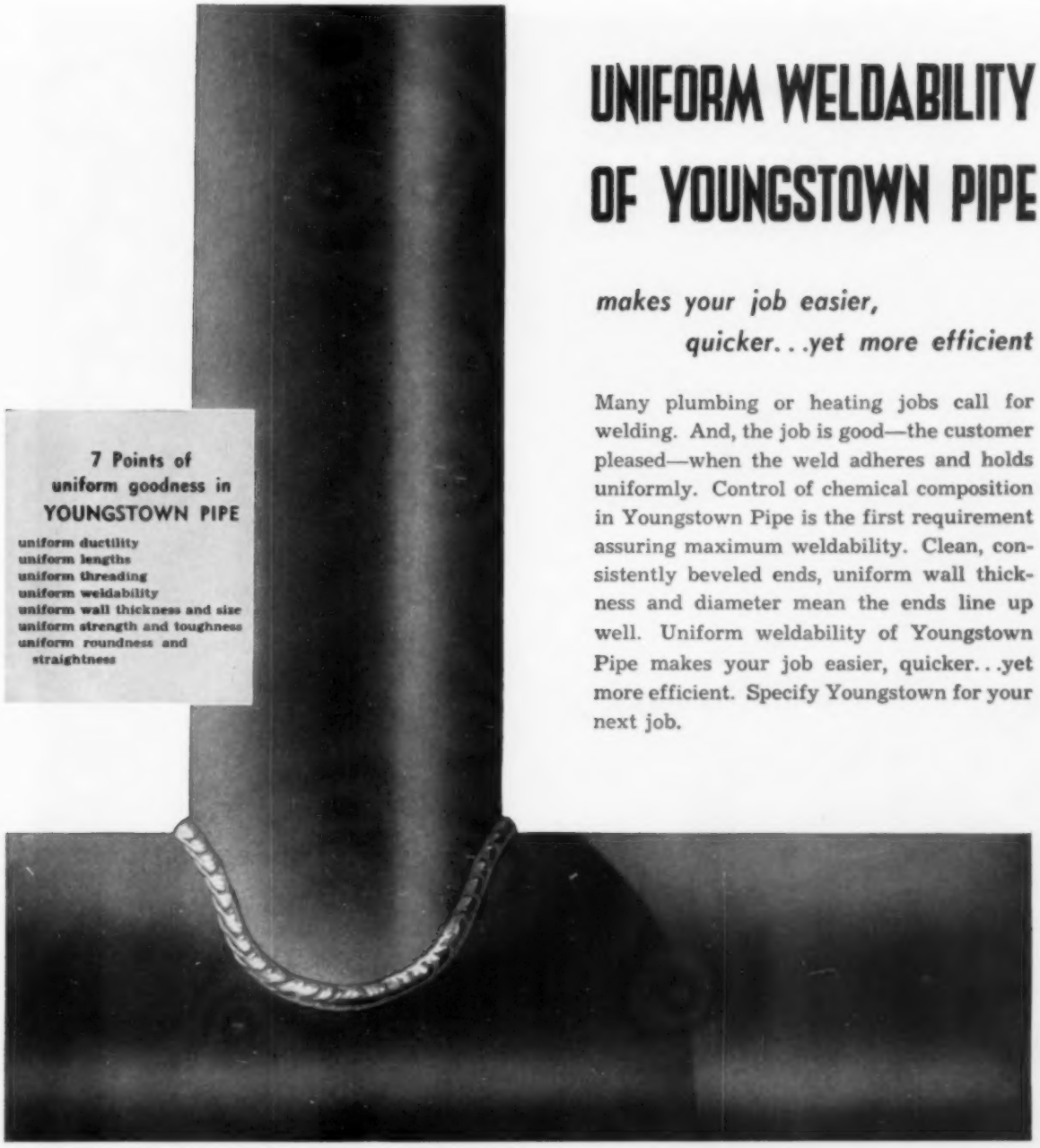
**"getting to know you"**

**Human Relations In Interracial Housing.** *Daniel M. Wilner, Rosabelle Price Walkley, and Stuart W. Cook. University of Minnesota Press, Minneapolis 14, Minn., 1955. 167 pp., $4*

Not since Reconstruction days have the relationships between white and colored Americans been so widely discussed and polemicized as they are today. The South's reaction to the Supreme Court's decision of May 1954, declaring unconstitutional the segregation by law of facilities for Negro and white children in the public schools, has touched off this nationwide discussion. But unlike the days of ninety years ago, we are fortunate today to have social scientists and social psychologists actively engaged in studying the impact of segregation and integration on our people and our institutions. The Research Center for Human Relations of New York University has pioneered in the study of intergroup relations in public housing. The Center has gathered a considerable body of evidence and provides some guidance to questions foremost in the minds of many Americans with respect to the attitudes of people living under segregated conditions and changes of attitude of people living under integrated conditions.

The evidence gathered in the Center's first field experiment (reported in a book by Deutsch and Collins, *Interracial Housing: A Psychological*

(Continued on page 203)



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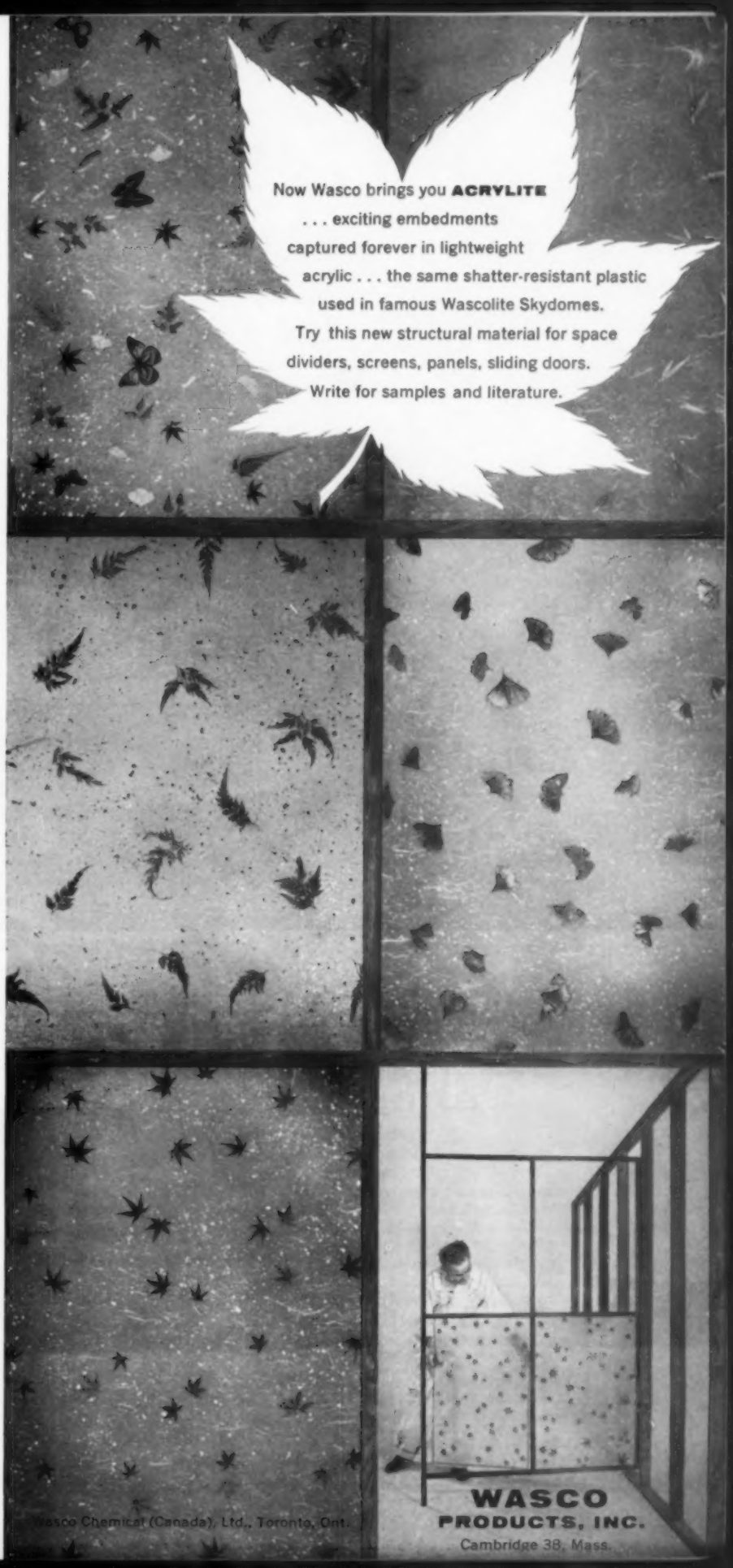
## reviews

(Continued from page 198)

*Evaluation of a Social Experiment)* indicated clearly that integration created more positive and favorable relationships between white and non-white tenants and, thus, provided the impetus for many local Housing Authorities to introduce programs of integration within their low-rent public housing developments.

The present book, *Human Relations in Interracial Housing*, aims to throw additional light on the effect of proximity of Negro tenants and white tenants, and on the attitude of white tenants to Negro tenants in both segregated and integrated housing projects located in Connecticut and Pennsylvania. Wilner, Walkley, and Cook studied two segregated projects which had Negro and white families living in the same project, but in separate buildings and two integrated projects that had Negro and white families living in the same buildings without regard to race. Intensive interviews were held with housewives in each of the projects. The basic findings of this study would seem to indicate that proximity to Negroes in projects determined the degree to which white families approved of interracial living. The evidence, although not conclusive, seemed to point to the fact that many of those families living close to Negro tenants had more freedom in contact with these Negro families and appeared to be less concerned as to whether their white friends or neighbors would approve of such friendliness. On the other hand, those white families which did not live near Negro families were more concerned about social status and the approval of their white friends and neighbors. The Center's study further revealed that changes in attitudes from unfavorable to favorable feelings about Negroes increased with white families living near Negroes.

(Continued on page 206)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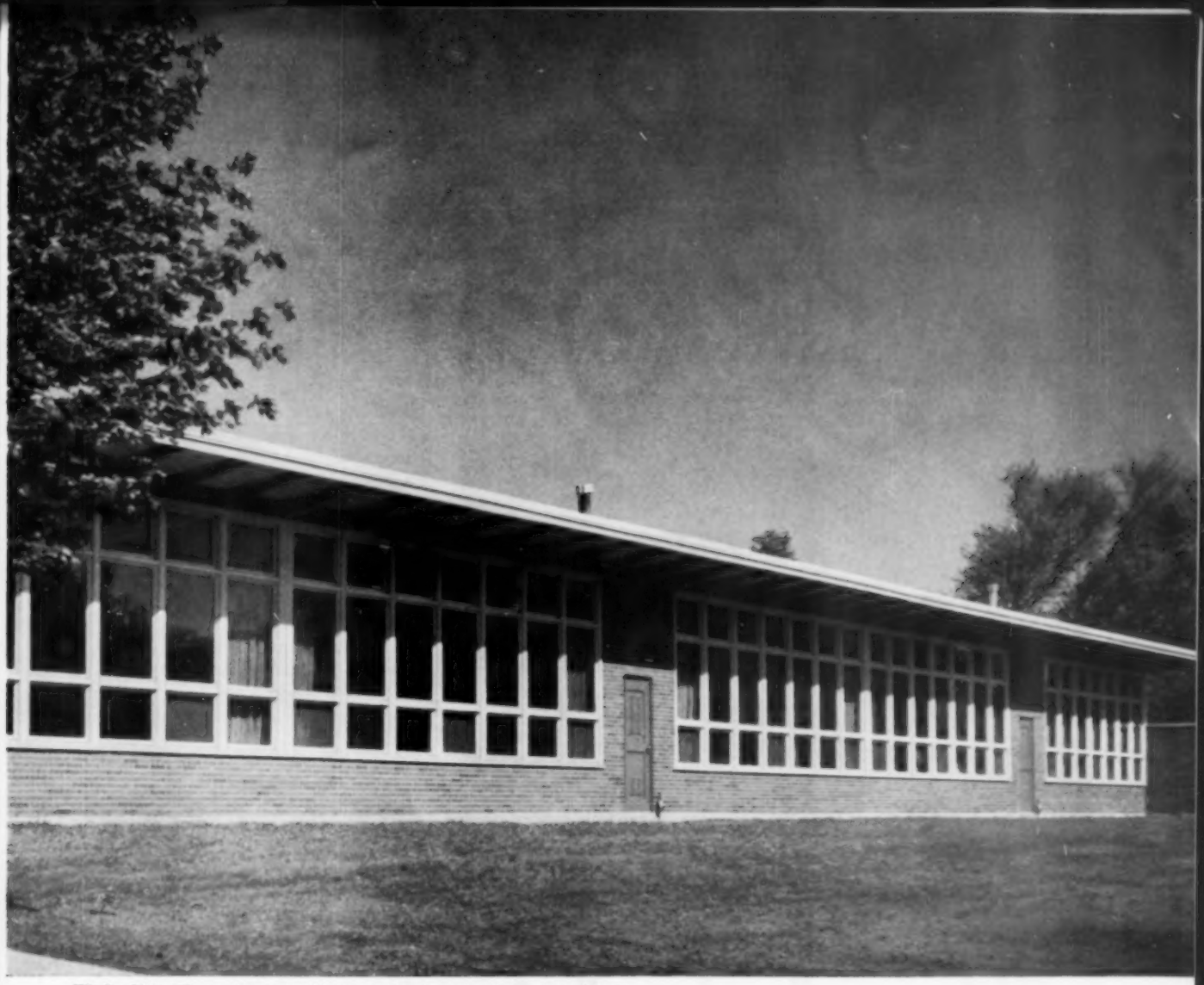

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# reviews

(Continued from page 203)

The significance of these findings lies in the fact that, as discrimination in housing is barred by law and court rulings and Negroes are able to move into areas in which they can afford to live, changes of attitude among white families resulting from closer contact may create a social climate more conducive to harmonious interracial living.

EDWARD RUTLEDGE

### challenging thesis

**Art in European Architecture.** *Paul Damaz. Reinhold Publishing Corp., 430 Park Ave., New York, N. Y., 1956. 228 pp., illus., $12.50*

"The Issue of Integration" has been argued in this magazine before *(February 1953 P/A)* and the Reinhold Publishing Corporation devoted an entire volume to the relationship of American architecture to the arts, Eleanor Bitterman's *Art in Modern Architecture*. With commendable thoroughness, the publishers have now issued an account of art in European architecture.

It is an exceptionally handsome volume, larger than the Bitterman book, on glossy paper, with a profusion of highly diversified examples in good color and black-and-white reproductions. And the accompanying text in this new volume is of great signficance. In addition to Le Corbusier's fascinating introduction, it contains a well organized account of art in historical and contemporary buildings, together with quotations from all the leading estheticians and architects of this century. The text is presented in English and French, and one might just as well voice the most pointed criticism right at the beginning of this review. The name of the translator has been omitted from the title page, let us hope in recognition of

(Continued on page 209)

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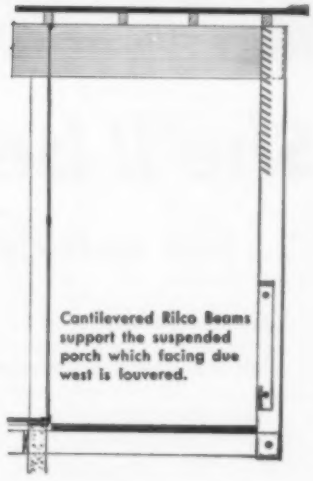

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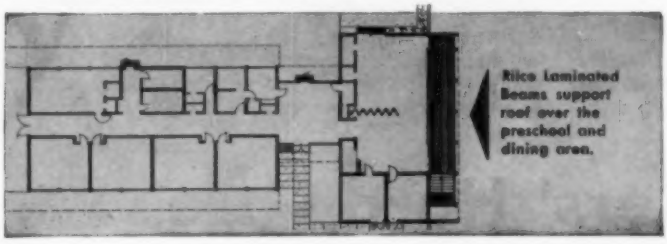

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## reviews

(Continued from page 206)

the negative service rendered to the author and Le Corbusier. It is a particular pity in the case of this book, because the essays present a disquieting and highly challenging contrast to the pictorial material.

One must admire the courage of the author, who took on one of the most controversial issues in the art world today and avoided glossing over the many contradictions inherent in the problem. On the contrary, he actually emphasizes the present insolvability of the integration of the arts by giving prominent space to statements that flatly deny the marriage between modern art and modern architecture. On the other hand, he proves his own regret over the vanishing of art in architecture is wrong, by showing examples of it in an almost bewildering profusion.

Of the many contradictions inherent in this theme, this very first premise offers itself as the principal point of challenge. Damaz states—together with practically every other writer or lecturer on this subject—that past ages had a keener sense of integration and responsibility toward the arts. But throughout history the application of art to architecture has always been infrequent, and the exclusive privilege of wealth and authority. There is not a trace of integrated art in Rome's "insulae," in small Byzantinesque churches in the Balkans or France, in the austere Norman castles, in Gothic Halls of the 13th and 14th Centuries, on the utterly barren town houses of the Florentine Renaissance, and the unrelieved stucco façades of Baroque and Neo-Classicistic streets in Germany or Austria. All these examples celebrate by their frank "functionality" the exaltation of the artist as only a glorifier of great architecture.

Art in context with architecture must express an idea—a collective conviction shared by a reasonable number of spectators. Three quotes

(Continued on page 210)

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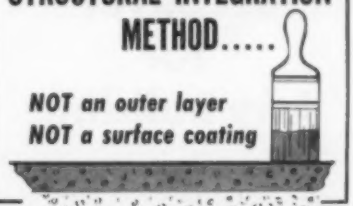

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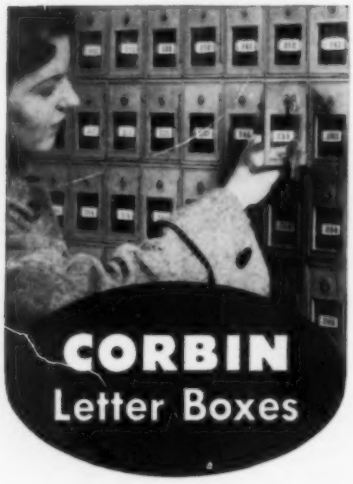


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## reviews

(Continued from page 209)

from Damaz make this point abundantly clear:

"Man has the need to affirm his beliefs through a concrete and permanent symbol."

"Both (art and architecture) must be brought together in a universal conception of the world, once again to unite thought and feeling."

But almost in the same breath:

"Our time scarcely favors a synthesis of the arts."

It is no coincidence, but rather the very core of the book, that the only convincing and appealing examples of art in European architecture are in churches. Mossaics, stained-glass windows, and statues of a religious character embody at least for one united congregation the pure idea that gives life to the work of the artist. And none of these examples is abstract. This evident fact furnishes the second great contradiction in Damaz' essays, in contrast to his visual material:

"Painting and Sculpture, now abstract, find themselves for the first time in intimate communion with architecture an art which itself is essentially abstract."

"Abstract art shows specific qualities by virtue of its fundamental harmony with the architectural spirit. A plane geometry made up of indefinite morphological variations of Euclidean forms, it is perfectly in harmony with the edifice—geometry in space. *Above all, it doesn't distract you with irrelevant meanings." (italics:* S.M.-N.)

"In any case, a bad abstract painting at least has the merit of being simply passive and meaningless; it will rarely be as displeasing as certain objective paintings."

Damaz then proceeds to assign to abstract art in architecture such tasks as to "lengthen or shorten distances, raise or lower a ceiling, open or enclose space, thicken or eliminate a wall, light up or darken the room." All these are purely architectural problems whose solution can be entrusted to any fairly intelligent interior decorator. They

(continued on page 212)


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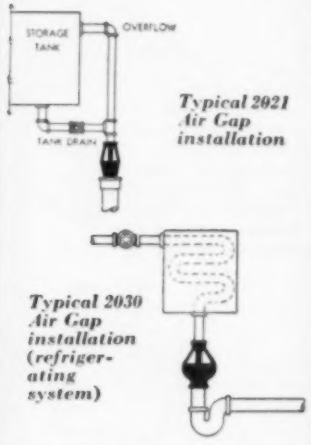


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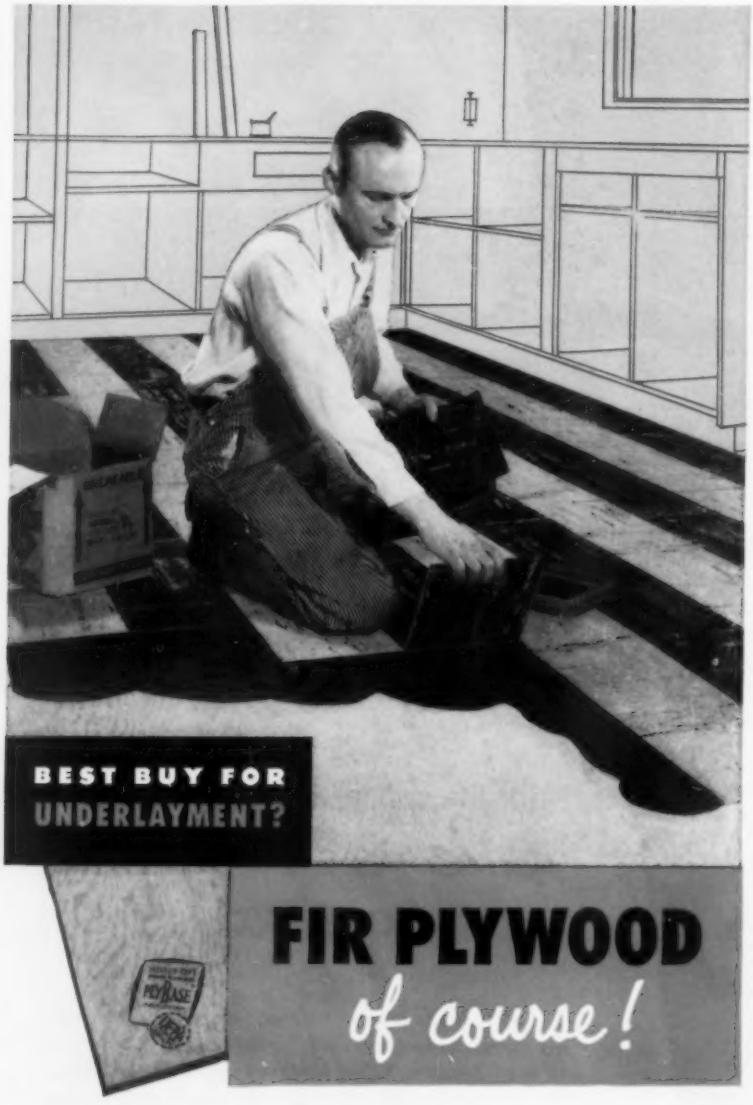


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## reviews

(Continued from page 210)

have nothing to do with art; but neither has abstraction as pure pattern. Damaz himself—most contradictory—claims that,

"Architecture has entered the period of aesthetics, and ignores the emotions that emanate from a work of art," and he deplores the lack of poetic feeling in architecture today. But the abstract art he shows in the illustrations are, at best, tasteful decorations, as in the mosaics of Pierre Olofsson, Marklund, and Lynge-Ahlberg; or, at worst, they look like sanitary washroom walls by Taueber-Arp and Pehrson, or gaunt playground gyms, as in the War Memorial in Milan. ART MUST STAND FOR SOMETHING to arouse the interest of the passer-by, and since our time has no ideological contents that could be stated without arousing controversy, the demand for "emotional content in modern architecture" must rely on other creative means than the application of murals or statuary.

These creative means are in the hands of the architect, and Paul Damaz succeeds in making this point clear to his readers by opening his book with an introduction by Le Corbusier, which is of inestimable value—not only as a clarification of the problem on hand (one could almost say "as a liquidation of the problem on hand"), but also as a piece of superb writing. The reader with even a rudimentary knowledge of French is urged to read the original text, because it is here that the translator does the most damage. With unassailable logic and a poetic precision that is his unique gift, Le Corbusier argues the prerogative of the architect to be the sole arbiter and integrator of art in architecture:

*"Celui qui touche à l'architecture se doit d'être un impeccable plasticien et un connaisseur vivant des arts. Aujourd'hui où l'architecte remet*

(Continued on page 220)

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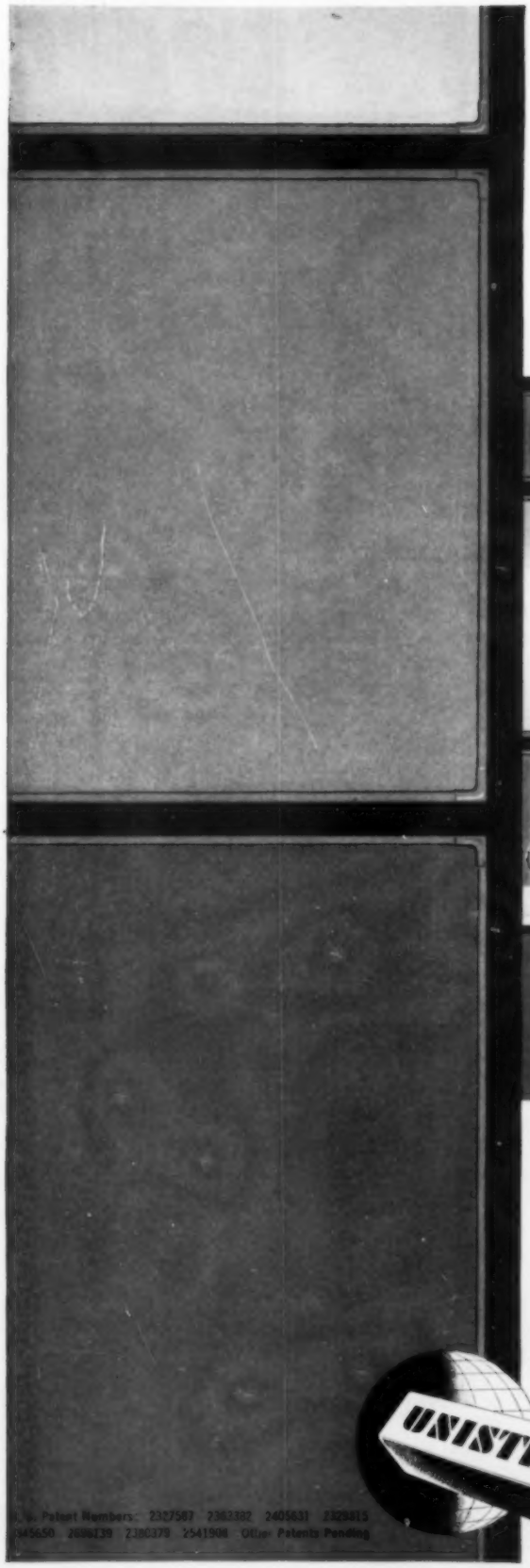


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Take advantage of the Westinghouse Complete Planning Service team's know-how and experience

# The Electrical System of Today's Modern Schools

In the cost-conscious school building of today, the electrical system can mean the difference between a mediocre and a top-grade educational environment. Perhaps the most important part of that system is planning.

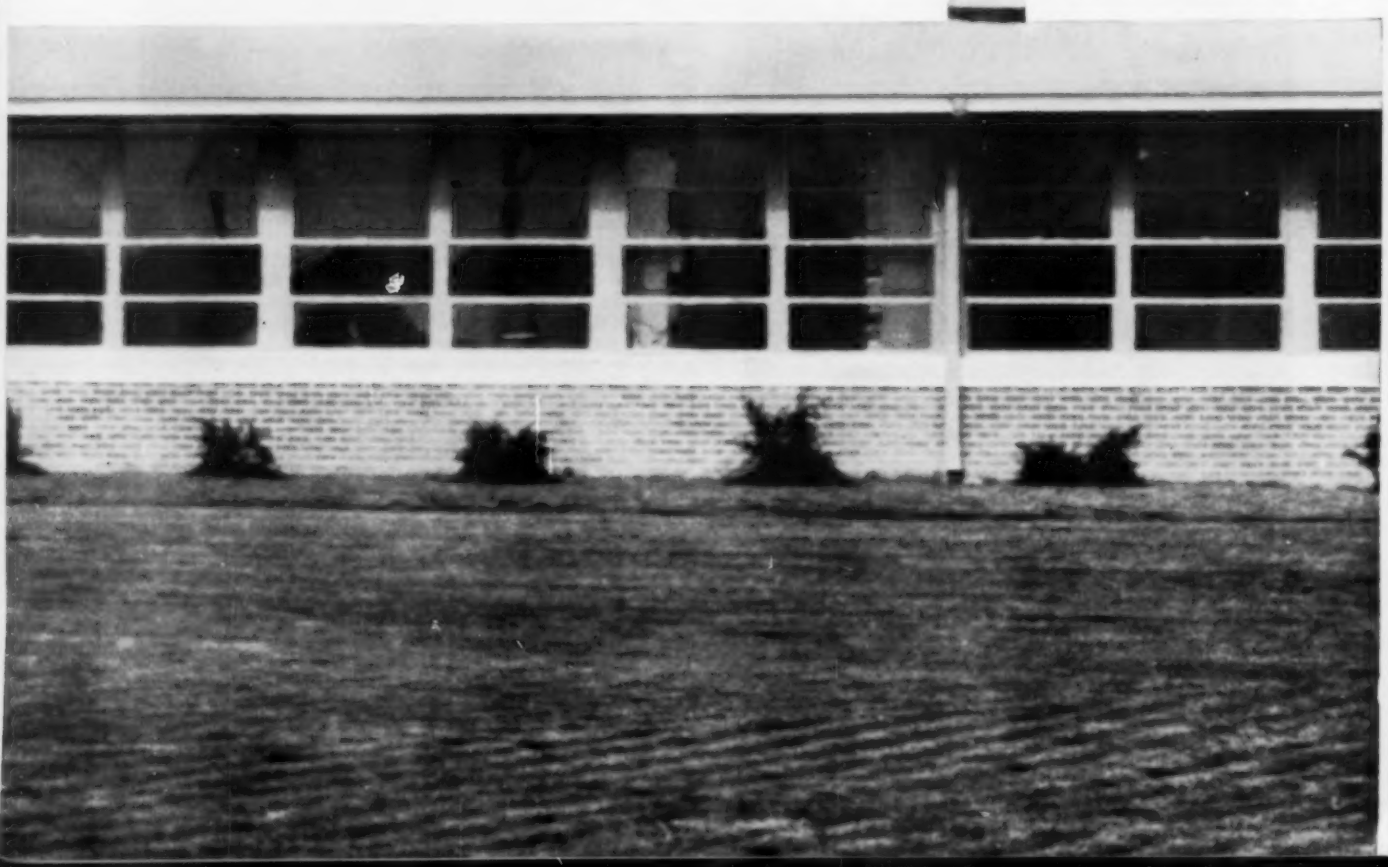
The complete planning service provided by Westinghouse in the Edgewood School, Columbus, Georgia (*illustrated these pages*), is available to you.

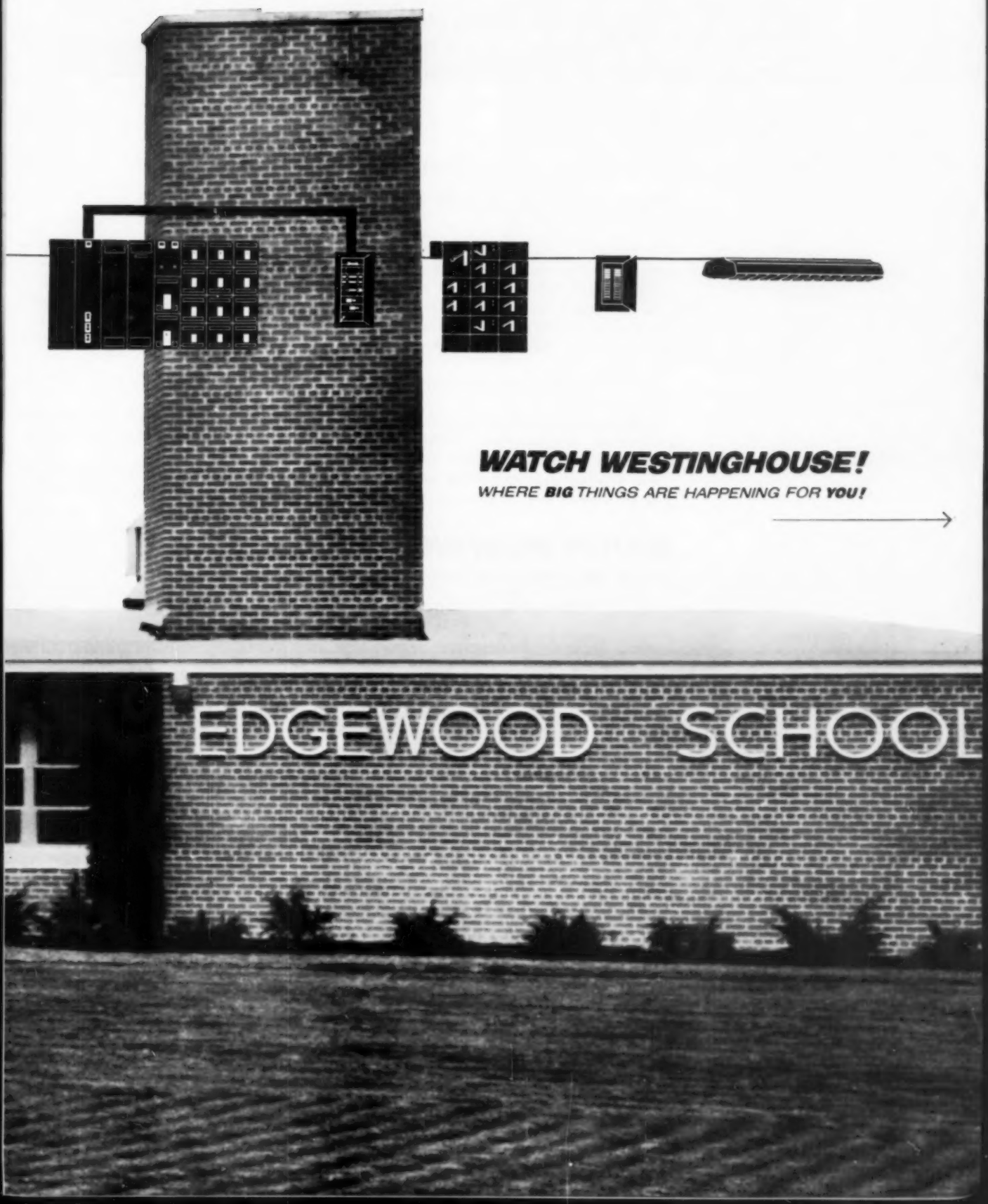
Recommendations for distribution and lighting equipment, layout schemes, voltage runs, and all other elements of good electrical practice are part of the service of your Westinghouse construction sales engineer. He has at your call services of the entire Westinghouse organization. They work together with electrical contractors and consultants and you from preliminary planning to building completion.

One call to the Westinghouse man in your area begins the operation. And, remember, you can be sure if it's Westinghouse. (*Continued next page.*)

DP-5025-A

Edgewood School,
Columbus, Georgia
*Architect:*
J. N. Pease & Company






***WATCH WESTINGHOUSE!***

*WHERE **BIG** THINGS ARE HAPPENING FOR **YOU!***

Westinghouse Construction Sales Manager Jim Witherspoon, headquarters member of the Complete Planning Service team.

## Westinghouse Control Centers Install up to 40% Faster

In schools, as in all modern buildings, the problem of locating motor controls is an important one. This can be solved by using control centers. And Westinghouse control centers can be installed in less time, with up to 40% labor savings.

Both time and material savings are passed on because instead of a widely scattered system of controls one unified structure can house everything. More savings are passed on to installer and user because Westinghouse manufactures standardized units, lowering production costs.

If expansion becomes necessary, additional motor controls can be put in with the same savings.

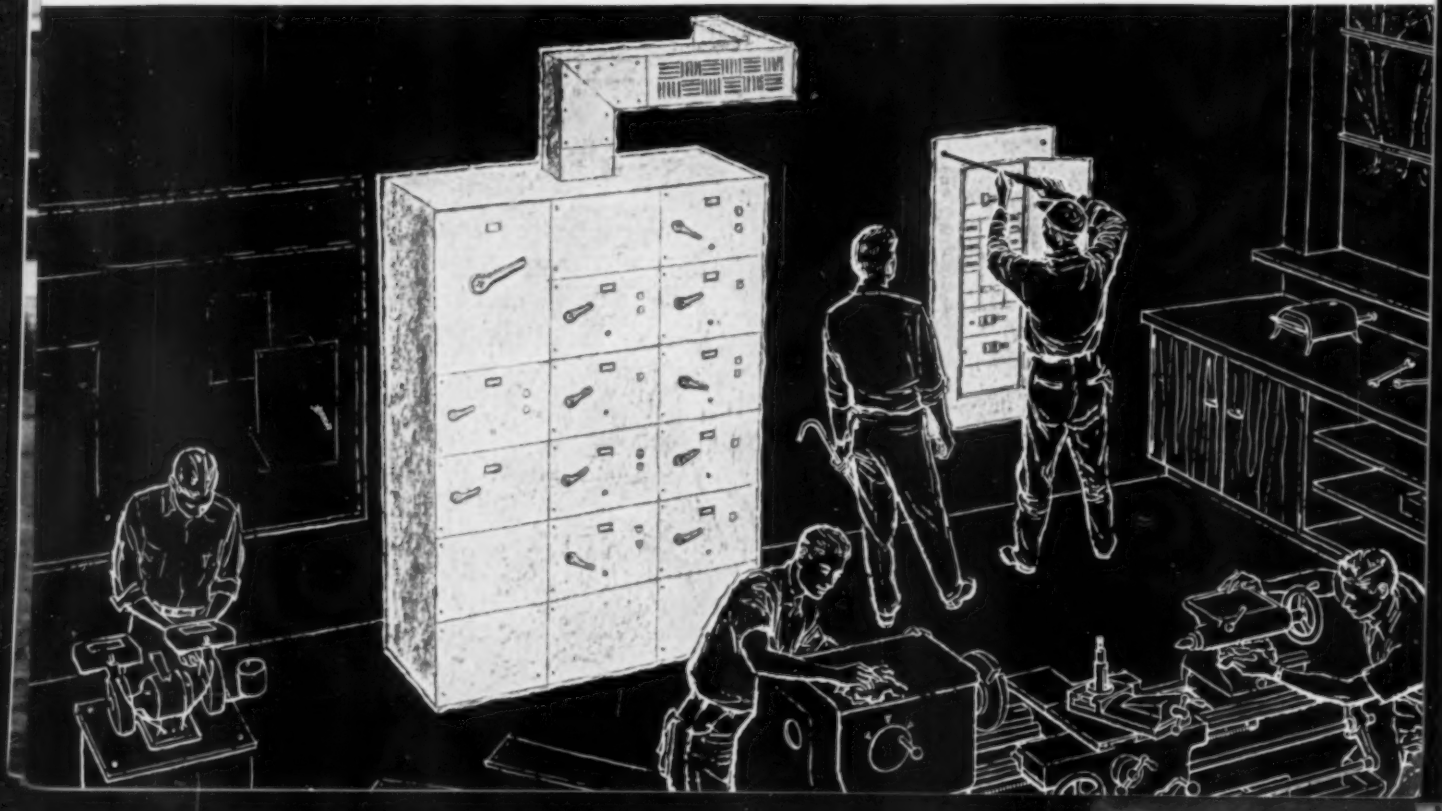
Students and employees are safe from danger because every Westinghouse unit includes a dead-front area. As an added safety measure, enclosures cannot be opened unless a handle outside the unit has been turned to "off".

Ask Westinghouse too, about advantages, like easy servicing or neat, modern design. You are sure to like the answers. And remember, you can be sure if it's Westinghouse.

DP-5025-B

**WATCH WESTINGHOUSE!**

*WHERE **BIG** THINGS ARE HAPPENING FOR **YOU**!*

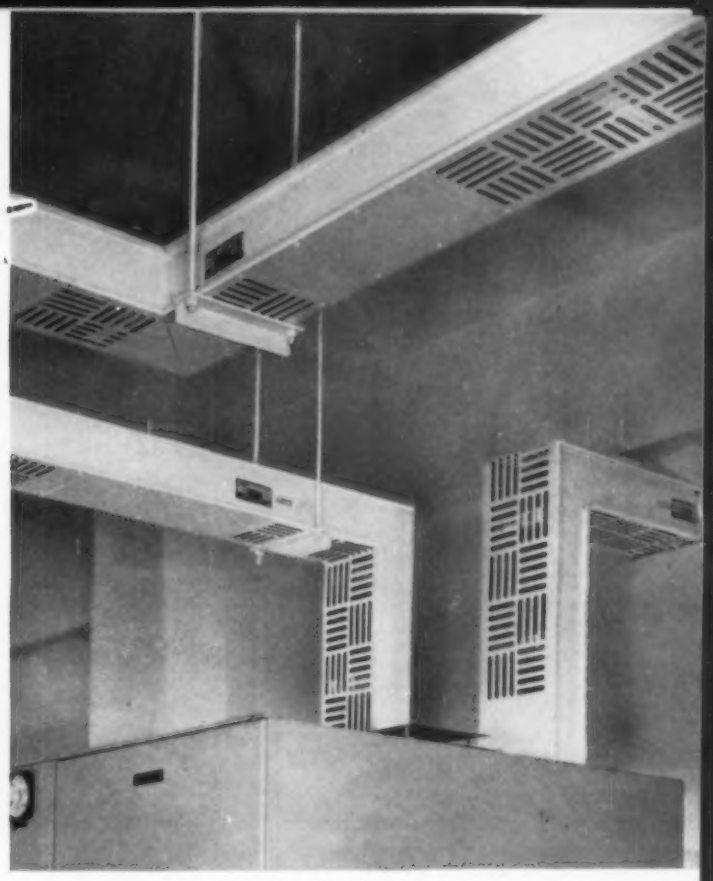


# To Save School Money— Aluminum Bus Duct, Now 15-25% Cheaper

Because you can pass on a 15-25% savings and still specify the best possible distribution system for the job, Westinghouse aluminum bus duct is a must for your next school project.

A new electrolytic plating process overcomes the old disadvantages of this modern, lightweight metal, makes it last the life of the installation. And the same top quality and performance heretofore obtainable only with copper is guaranteed with Westinghouse aluminum bus duct.

You can carry power to any location in the building. Because it is lighter, aluminum bus is easier to handle than any other duct, and hanging requires hours less time than before.



# Prefabricated Sections Offer Endless Layout Possibilities

In original layouts or during future changes, Westinghouse aluminum bus duct will be flexible and reusable as much as 100%. Prefabricated sections (*shown right*) provide these benefits.

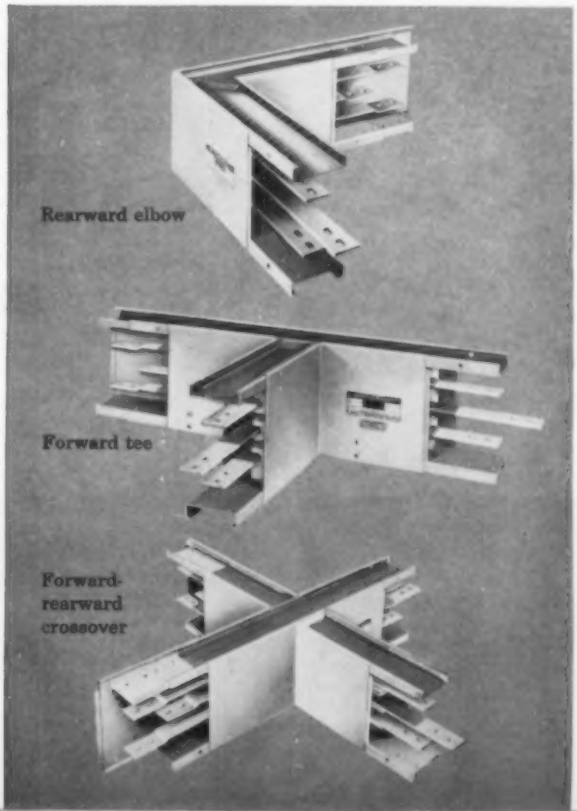
Angles, elbows, tees, almost any kind of shape is standard with Westinghouse. To install, you need only bolt sections together. They can be changed that simply, to accommodate new demands.

By using cantilevered hangers, fast, foolproof installation is a reality. Clamps are attached to a drop rod and can be shifted along the top of the duct to any required position.

Don't you want to know more about this modern distribution method? Ask the Westinghouse man in your area or write for booklet B-6740 to Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa.

You can use to advantage the many shapes and connections that are standard parts of Westinghouse aluminum bus duct. (Three shown below.)

DP-5025-C



## Westinghouse Controlled Lighting Provides

The pictures above reveal examples of good classroom lighting. The fixture that helps attain these results is pictured directly below on this page. It is the Westinghouse LC fluorescent luminaire.

Lending a design of beauty with top performance, the LC blends well with modern architecture and provides excellent seeing comfort. Luminous cornered plastic side panels enhance the appearance.

The LC is a direct-indirect light when suspended. For a semi-direct design, the same unit may be flush-mounted on the ceiling.

Cost-wise, many advantages are gained. Slide-action hangers

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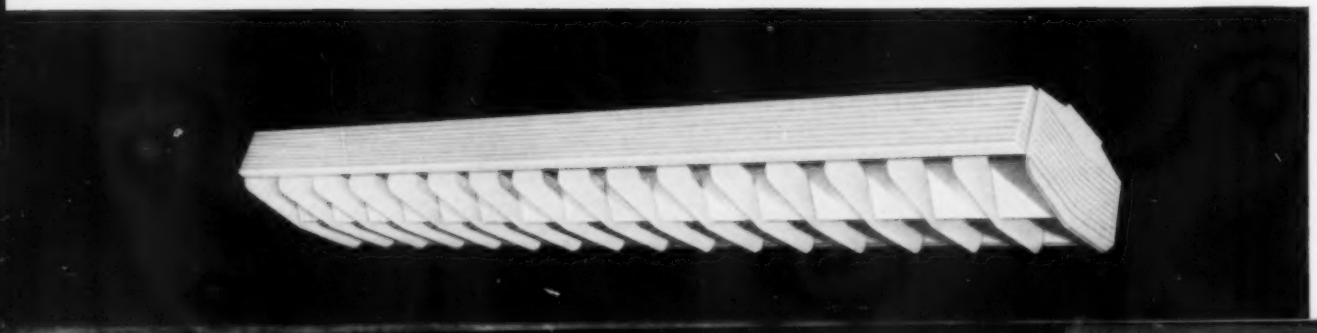
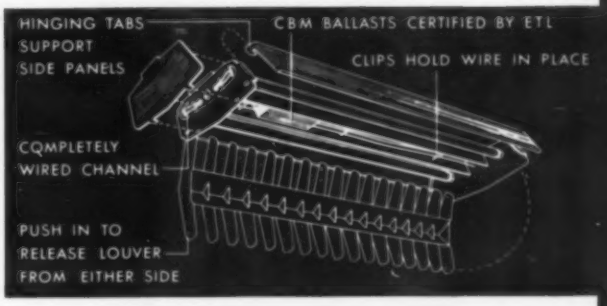


## Front of the Class Seeing All Around the Room

permit more freedom in hanging and the units go up much faster. From a maintenance standpoint, LC's are the easiest fixture to service. Louvers hinge down from either side, making it convenient to relamp and clean. A very important feature in school operations.

Ask Westinghouse about these features (*pictured at right*) and the other benefits of controlled school lighting.


HINGING TABS SUPPORT SIDE PANELS
CBM BALLASTS CERTIFIED BY ETL
CLIPS HOLD WIRE IN PLACE
COMPLETELY WIRED CHANNEL
PUSH IN TO RELEASE LOUVER FROM EITHER SIDE

**Talk to the Westinghouse Complete Planning Service team before you complete plans on your present project.**

DP-5025-D

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# reviews

(Continued from page 210)

*à l'ingénieur une part de son travail et de sa responsabilité, l'accession à la profession ne devrait être consentie qu'aux individus dûment dotés de la notion de l'espace. Privé de ce sens, l'architecte perd sa raison d'être et son droit d'exister."*

SIBYL MOHOLY-NAGY

# notices

### honors, awards

*Church Property Administration* this spring announced winners of annual Professional Competition for Better Catholic Institutional Design—for buildings completed since 1950. First awards went to: BORDELEAU-PANNELL, Architects, for St. Gabriel's Church in Chinook, Mont.; J. GERALD PHELAN, Architect, for St. Teresa School, Trumbull, Conn.; BELLI & BELLI, for St. Patrick's High School, Chicago; and DIEHL & DIEHL, Architects, for St. Bridgid Parish Convent, Detroit.

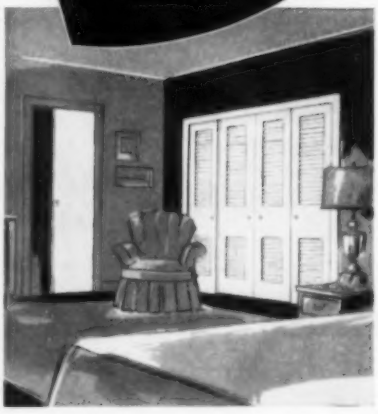
CONCRETE REINFORCING STEEL INSTITUTE's 1956 Award was made to N. M. NEWMARK and C. P. SIESS, Engineers-Educators-Researchers, in recognition of their joint activities in field of reinforced concrete research at Talbot Laboratory, UNIVERSITY OF ILLINOIS, Urbana, Ill.

POMONA TILE MANUFACTURING COMPANY, California, recently sponsored a tile design competition, participated in by Southern California junior college students. THOMAS L. JAMIESON won first award of $300; GARY GALEY, second award of $200; DELORIES YONDER, third award of $100.

UNIVERSITY OF NEW MEXICO announces new Division of Architecture, with five-year curriculum leading to Bachelor of Architecture degree. Write: Prof. John J. Heimerich, University of New Mexico, Albuquerque, N.Mex., for information.

(Continued on page 223)


SPACE-SAVING *Ideas* HELP SELL THE HOUSE



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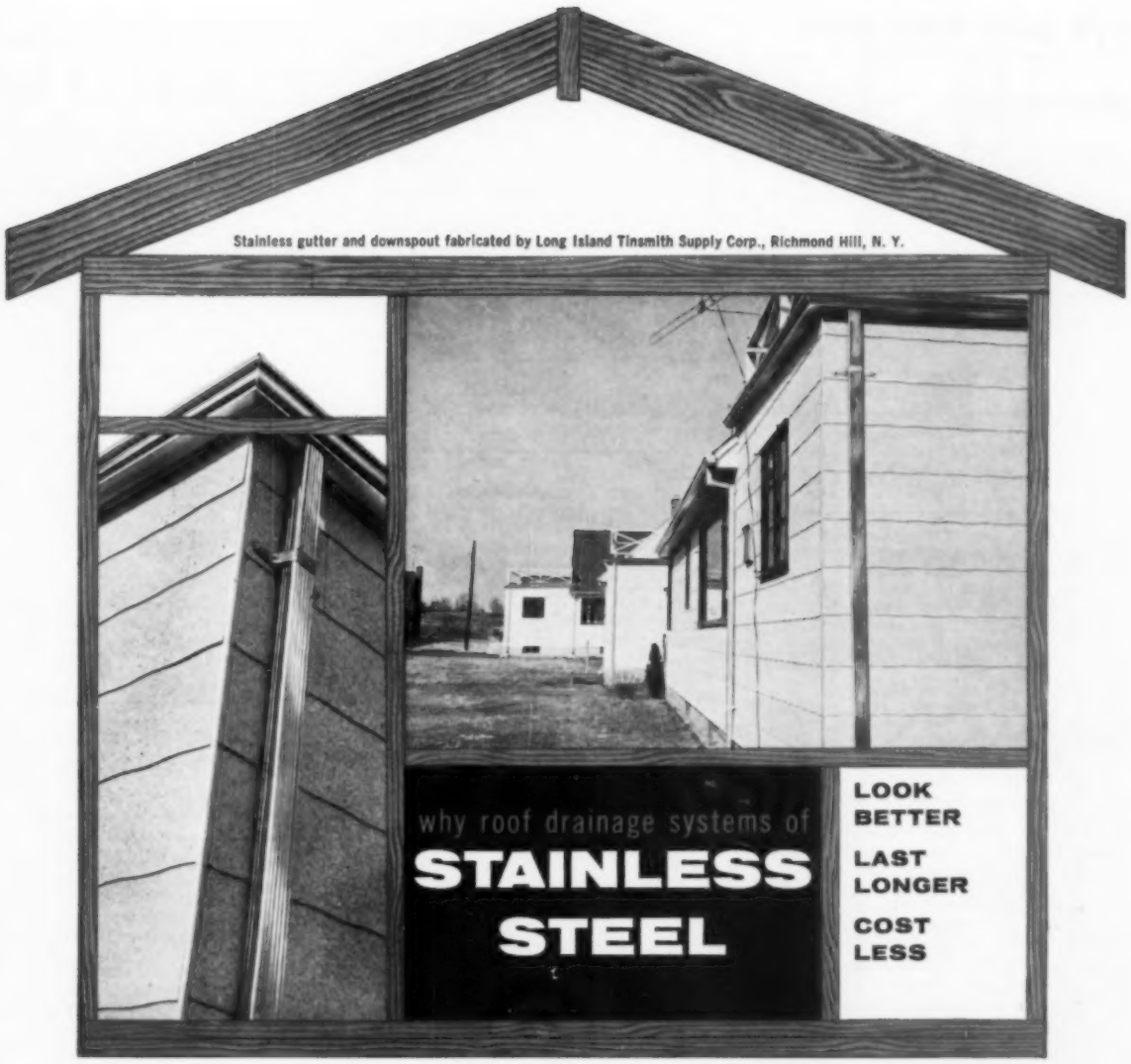
Stainless gutter and downspout fabricated by Long Island Tinsmith Supply Corp., Richmond Hill, N. Y.
why roof drainage systems of
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COST LESS

*Stainless* beauty is *lifetime* beauty—it won't rust, chip, discolor or stain walls as many other metals do. • And stainless is *strong*. It doesn't sag or bend under heavy deposits of ice and snow. And its exceptional wear and corrosion resistance means it stays on the job in spite of years of abrasion from gravel and debris, or the corrosive action of dead leaves. • These are reasons stainless is preferred by home buyers. It's first choice with fabricators, too, because it solders easily—is clean and simple to handle. • What's more, all these advantages come at a price which is competitive with ordinary materials—actually lower than some metals in common use. Call or write now for more details. *Crucible Steel Company of America, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.*

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## situations open

ARCHITECT—graduate or experienced, five to ten years of work experience. Board work on renovation and construction. Position available on staff of service organization of large office building in the Middle Atlantic Region. Please advise education, experience and salary expected. Reply held confidential. Box 358, PROGRESSIVE ARCHITECTURE.

ARCHITECTS—ENGINEERS—Bureau of Indian Affairs. Technical positions now available. For particulars write to Chief, Bureau of Buildings and Utilities, P. O. Box 931, Albuquerque, New Mexico.

ARCHITECTS—U. S. Civil Service. Salary $4,480 to $8,990. For particulars write U. S. Civil Service Commission, Washington 25, D. C.

ARCHITECTS & ARCHITECTURAL DRAFTSMEN qualified through training and experience to design housing, churches, schools and other buildings. Give full information as to education, experience, salary requirements and when available. Location eastern New York. Box 368, PROGRESSIVE ARCHITECTURE.

ARCHITECT—with established quality clientele in Western Pennsylvania and adjoining states wishes to fill recent vacancy of top designer in small office. Work is institutional type such as college buildings, schools, churches, convents, and hospitals with freedom in contemporary, rational design. Prefer immediate start, but would wait reasonable time for right man interested in long range association. If you are capable of having your own office, but hesitate because of lack of clientele or capital, this could be your answer. Please state experience, annual income expected, and availability. Box 378, PROGRESSIVE ARCHITECTURE.

ARCHITECT ASSOCIATE wanted—for responsible position with well established, small, progressive architectural firm, located in metropolitan area of south Texas, known as the Lower Rio Grande Valley. Must be good architectural designer and capable of handling all phases of architectural work, including client and contractor contacts. General practice with emphasis on schools and public buildings, some churches, residences and commercial buildings. Salary and bonus commensurate with ability. Submit complete data on education and experience, recent photograph, and any other pertinent information. Box 379, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL DESIGNER — minimum 5 years experience, including church design, preferably for Evangelical Christian congregations. Opportunity for partnership in small firm. Will be in charge of architectural department with opportunity for administration. Location New England. Please send information on education, experience, age and availability. Box 390, PROGRESSIVE ARCHITECTURE.

REGISTERED ARCHITECT—qualified to take complete charge of architectural department as part of established engineering firm. Applicant should submit resume of experience, education, salary and availability. Permanent position. Location midwest. Box 380, PROGRESSIVE ARCHITECTURE.

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Standard charge for each unit is Five Dollars, with a maximum of 50 words. In counting words, your complete address (any address) counts as five words, a box number as three words. Two units may be purchased for ten dollars, with a maximum of 100 words. Check or money order should accompany advertisement and be mailed to Jobs and Men, c/o Progressive Architecture, 430 Park Avenue, New York 22, N. Y. Insertions will be accepted not later than the 1st of the month preceding publication. Box number replies should be addressed as noted above with the box number placed in lower left hand corner of envelope.

ARCHITECTURAL DRAFTSMAN — with minimum of two years practical experience for general architectural drafting in medium size Eastern office. Excellent opportunity for advancement. Submit full information, photograph, and salary expected. Box 381, PROGRESSIVE ARCHITECTURE.

ASSOCIATE ARCHITECT — to meet requirements of an expanding program, the persons appointed to these two new permanent positions will be responsible for providing liaison between the Engineering Division, county departments and architectural consultants in the preparation of plans and specifications for county facilities. Applicants should have B.S. degree in architecture and four years' responsible architectural experience, two years of which must have been experience in the review and checking of architectural plans for large buildings. Make beautiful San Diego your home and take advantage of this excellent opportunity. Write County Civil Service, Room 402, Civic Center, San Diego, California.

BUILDING STRUCTURAL ENGINEER — New York State residency required. Six openings at assistant level, $5660-6940. C.E. degree and 2 years experience in the development of structural details in the design of buildings; or an equivalent combination of experience and training. Four openings at senior level, $6890-8370. New York State P.E. license and 2 years in the design or review of structural features for steel and concrete buildings. Filing closes September 7 for October 6, 1956 examination. Write for details to Recruitment Office, New York State Civil Service Department, Albany, New York.

EXPERIENCED ARCHITECTURAL DRAFTSMAN —older man preferred. Can guarantee long term employment. In the heart of fishing and hunting country of Montana. Work consists of schools, hospitals, churches, etc. Give complete details in first letter. Box 382, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL DRAFTSMEN — preferably college graduates with minimum of three years experience. Small expanding office doing quality work with growing backlog. Present work includes large volume of school work. Send references, experience, educational background, salary expected, availability, etc. Dollar, Bonner and Blake, Architects, 1103 Madison Street, Wilmington, Del.

DESIGNERS & DRAFTSMEN — Architectural, Structural, Mechanical and Electrical. For growing company. Top salary. Advancement. Scheduled overtime. Vacation. Pleasant Atmosphere. Long Range Program. Convenient Interviews Arranged. Replies held in confidence. Marbarry Corp., 120 Greenwich St., New York 6, N. Y. REctor 2-3749.

DESIGNERS AND DRAFTSMEN—a genuine opportunity to work and grow with an expanding progressive architectural organization specializing in contemporary school planning which has gained national recognition. We can offer the security that comes with a permanent position and company benefits in a medium sized office with outstanding facilities for engineering and site planning. Send resume or phone to Warren H. Ashley, Architect, 967 Farmington Ave., West Hartford, Conn.

TECHNICAL WRITER—excellent opportunity with one of the country's largest manufacturers of building materials. Must have sufficient knowledge of insulation board and acoustical products, rock wool, plasters, lime, asbestos products, etc., to develop and edit technical bulletins, prepare specifications for architects. Architectural degree or background an asset. Age not as important as product knowledge and ability to write clearly. Prefer married man willing to locate in upstate New York. Indicate qualifications, experience and salary expected in letter to Box 383, PROGRESSIVE ARCHITECTURE.

## situations wanted

ARCHITECT—Aged 30, experienced in European and American practice seeks partnership or position leading to partnership, in busy office in coastal or near coastal town. Please reply to Box 384, PROGRESSIVE ARCHITECTURE.

ARCHITECT—with varied experience in large commercial, industrial and institutional projects. Sketches, design, specifications, management, supervision or charge of office. Reply giving details and opportunities available. Box 385, PROGRESSIVE ARCHITECTURE.

AVAILABLE—Lady architectural assistant, first class. Top designer, colorist, delineator. Working drawings, details, commercial interiors. Long experience, interstate and foreign project development. Also hostess, interviewer, secretarial experience. Unusually fine education. Highest references and record. Rapid, accurate, practical. Any location. Hour, contract, associate basis. Miss Delores, 429 Capitol Hotel, Richmond, Va.

REGISTERED ARCHITECT—N.C.A.R.B. Certificate, eight years experience, willing to relocate anywhere to assume a position as design associate with a firm that is sincerely interested in promoting good, contemporary work. Salary on a profit sharing basis with definite possibility of working into partnership in the near future. Box 386, PROGRESSIVE ARCHITECTURE.

REGISTERED ARCHITECT—structural engineer, two university degrees, married, age 36. Own business 3 years, 16 years architectural and engineering experience. Excellent at design, working drawings, administration. Can handle any project from start to completion. Desires top-executive position with interest in firm. Resume upon request. Box 387, PROGRESSIVE ARCHITECTURE.

REGISTERED ARCHITECT—31, N.C.A.R.B. certificate, with sound background and training, particularly qualified in the fields of research, design and presentation, desires to assume responsibilities of partnership with a firm that would consider it advantageous to increase their number to include a man of these qualifications. Box 388, PROGRESSIVE ARCHITECTURE.

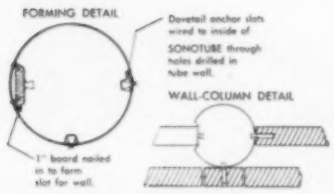
*(Continued on page 226)*

# FORMING FACTS for ARCHITECTS

## Tying masonry walls into round concrete columns

Round supporting columns of concrete formed by SONOTUBES can easily be made an integral part of the exterior or interior walls of any structure.

Because SONOTUBE Fibre Forms can be drilled, sawed or otherwise cut on the job, walls of brick, frame or concrete masonry can be simply tied-in to the columns.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Dovetail anchor slots wired to inside of
SONOTUBE through holes drilled in tube wall.
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# notices

(Continued from page 220)

### emeritus professor

ARTHUR F. DEAM, who will retire from faculty of UNIVERSITY OF PENNSYLVANIA's School of Fine Arts, September 30, 1956, has been elected Emeritus Professor of Architecture.

### elections

G. S. WHITTAKER was recently elected to Board of Directors of ALBERT KAHN ASSOCIATED, Architects-Engineers, Detroit, Mich. Incumbent directors re-elected include GEORGE H. MIEHLS, SHELDON MARSTON, G. K. SCRYMGEOUR, SAUL SAULSON, R. E. LINTON, and SOL KING.

JOHN F. HENNESSY, of Syska & Hennessy, Engineers, New York, N.Y., was recently elected President for coming year of NEW YORK BUILDING CONGRESS, INC. Vice-Presidents are: MAX ABRAMOVITZ, JOHN J. BRENNAN, VERNON JARBOE, OTTO L. NELSON, and H. C. TURNER, JR.

### new associates

HENRY J. STOJOWSKI now is associated with ROGERS & BUTLER, Architects, 219 E. 44th St., New York 17, N.Y.

SAMUEL C. BAST, Engineer, now is associated with SEELYE STEVENSON VALUE & KNECHT, Consulting Engineers, 101 Park Ave., New York 17, N.Y.

JAMES W. ELLISON, Architect, now is associated with WORTMAN & WILKINS, Architects, 309 Marion Bldg., Seattle 4, Wash.

HARRY SAUNDERS and KAZ NOMURA, Architects, have become Associates in firm of A. QUINCY JONES & FREDERICK E. EMMONS, Architects-Site Planners, 12248 Santa Monica Blvd., Los Angeles 25, Calif.

ERIC KEBBON and EDWIN B. OLSEN have become Associates of MCKIM, MEAD & WHITE, Architects, 101 Park Ave., New York, N. Y.

(Continued on page 227)

something new on

**MARS**

Staedtler has been coming up with something new in pencils ever since the first Staedtler pencils were made three centuries ago.

Now it's the new, sturdy, solid brass lead sharpener built into the Technico Mars-Lumograph push-button lead holder. Saves you work, time, money.

Get the imported Mars Technico lead holder and leads today—they are the best, yet cost no more.

The 1001 Mars Technico clutch mechanism holds leads securely; light in weight, perfectly balanced; $1.50 each, less in quantity.

1904 Mars-Lumograph leads are so opaque, inking-in is unnecessary; won't flake or smudge, give better reproduction. Perfectly graded in 18 degrees—EXB to 9H; $1.20 doz., less in quantity.

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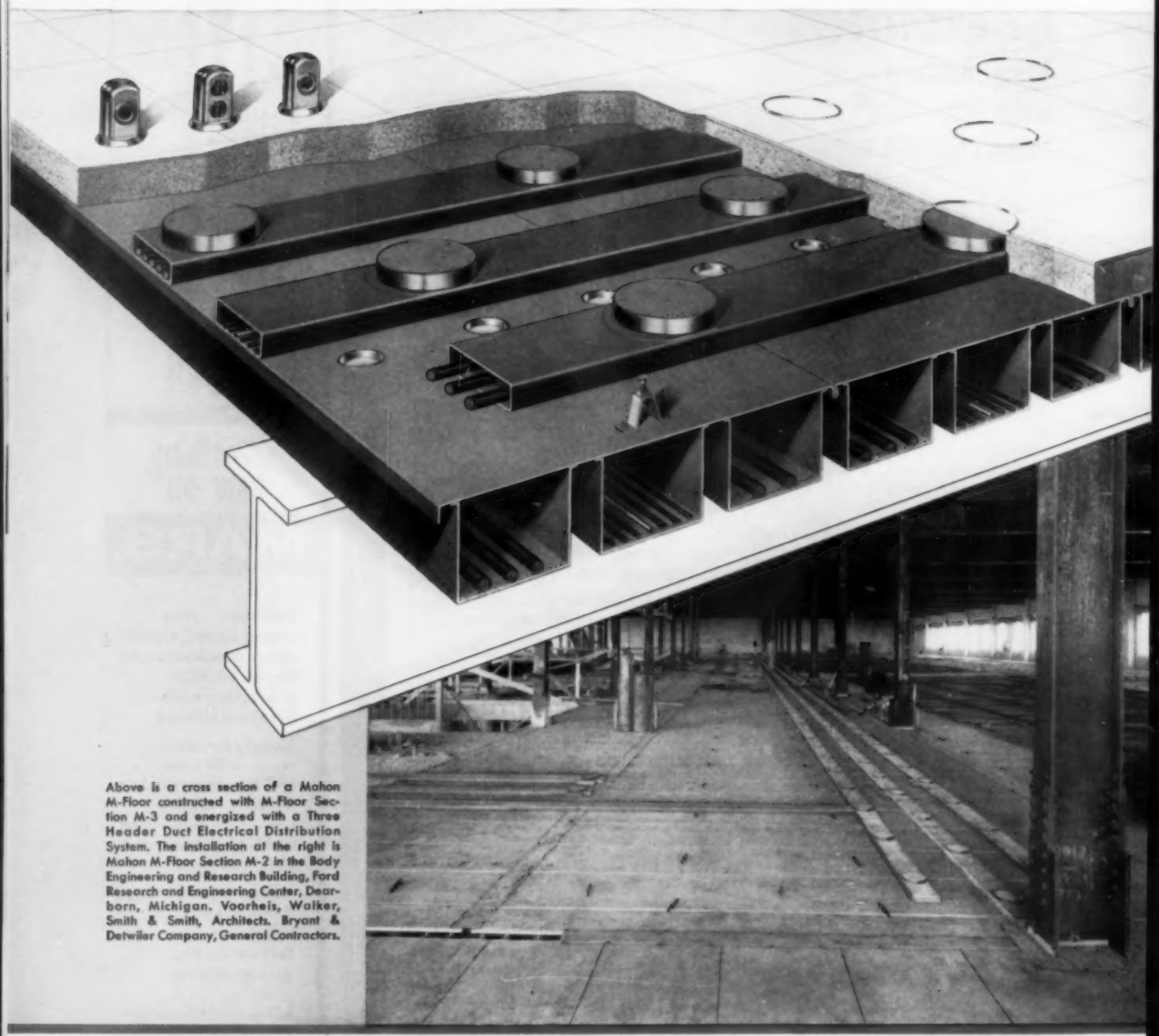
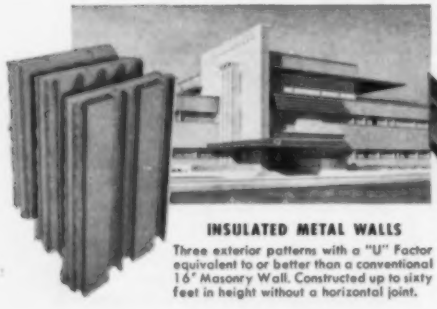
# M-FLOORS . .



Above is a cross section of a Mahon M-Floor constructed with M-Floor Section M-3 and energized with a Three Header Duct Electrical Distribution System. The installation at the right is Mahon M-Floor Section M-2 in the Body Engineering and Research Building, Ford Research and Engineering Center, Dearborn, Michigan. Voorhels, Walker, Smith & Smith, Architects. Bryant & Detwiler Company, General Contractors.



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Standard Double Rib, Wide-Flange Double Rib, and Long Span M-Decks, which can be furnished perforated and fitted to provide an efficient acoustical ceiling.

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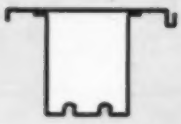
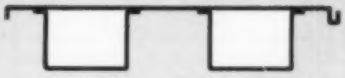
# . . Insure Against Electrical Obsolescence . . . Provide Convenience of Over-all Electrical Availability!

**MAHON**
**M-FLOOR SECTIONS**



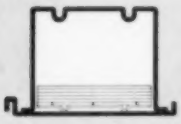
**M-FLOOR SECTION**
**M1**



**M-FLOOR SECTION**
**M2**

**M-FLOOR SECTION**
**M3**

**COMBINATION DECK/CEILING UNIT**



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# p/a jobs and men

*(Continued from page 222)*

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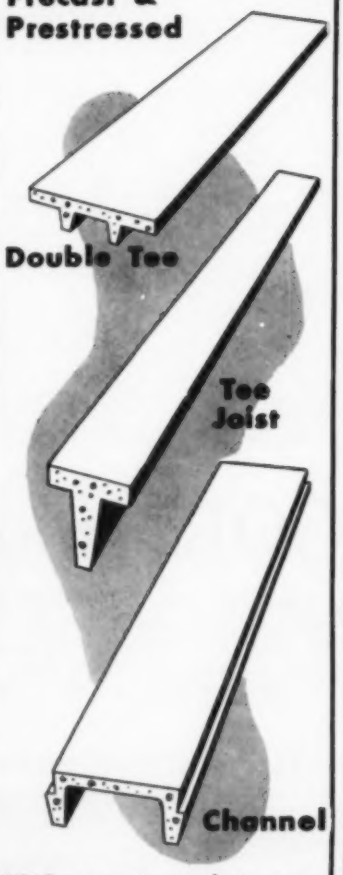


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(Continued from page 223)

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(Continued on page 231)

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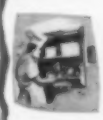

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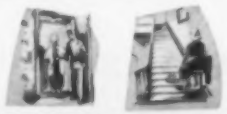

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**ENGINEER** LEWIS W. HIXSON of Hixson, Tarter & Associates, Cincinnati (designers of Kroger warehouses) says, "Low cost per square foot and dead weight savings definitely affected the selection of Tufcor over other poured-in-place decks. Because much of the Kroger buildings will be refrigerated, the high insulation value of a Tufcor-Insulating Concrete roof system also offered a big advantage, helped save $5,000 on the Little Rock job, alone!"

**CONTRACTOR** WERNER KNOOP of the Baldwin Co. (general contractors for the Kroger warehouse in Little Rock) says, "We're very pleased that the Kroger Company decided to use Tufcor steel decking. It has such surprising strength in comparison with most decking. It arrived on time, was cut the way we wanted it and helped us to stay on schedule. I'm very much impressed with the speed of Tufcor placing!"

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**IN LITTLE ROCK,** workmen placed *and welded* 8200 sq. ft. of Tufcor in 3 hours . . . or 45 sq. ft. per minute! Each sheet covers about 32 sq. ft., fits snugly in place to provide an immediate, safe working platform.

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. . . is easy to place, saves on framework and fill, guards against fire. In fact, many insurors and codes insist on sprinklers every 120 sq. ft. when ordinary decking is used—but only every 130 sq. ft. with fire-resistant Tufcor! By saving on sprinklers and insulation, Tufcor cut $6,275 off the Little Rock bid price . . . $12,500 in Shreveport! Like to save thousands of dollars on your next job? For more information, estimates or costs on your building plan, consult Granco home or district office, Attention: Dept. P-64.

**For Child's Food Stores, Inc., a Kroger associated company*

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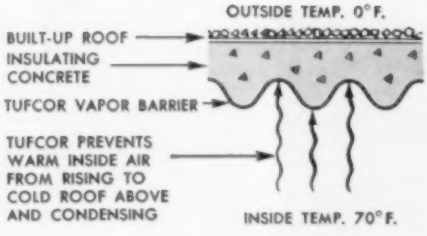
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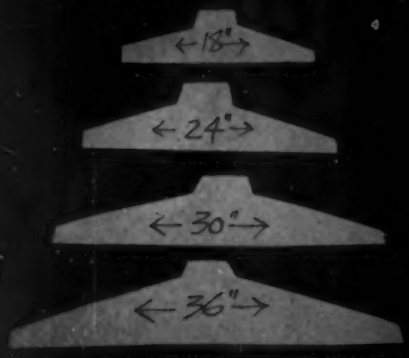


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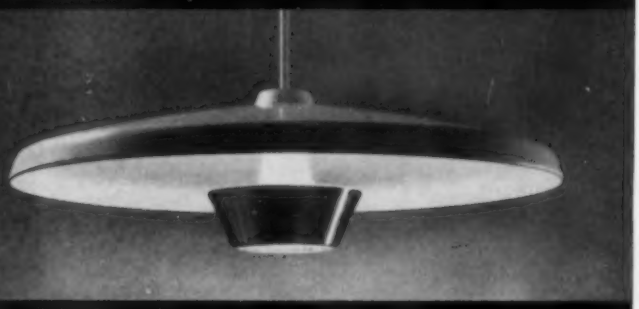

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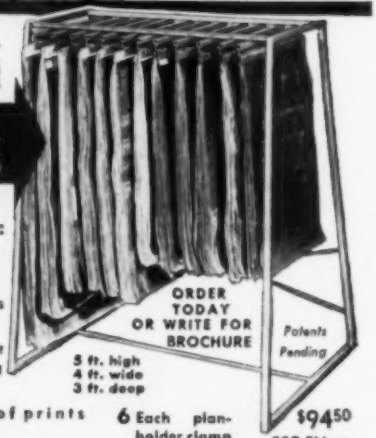


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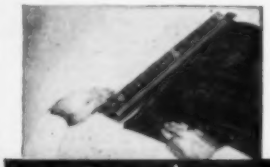

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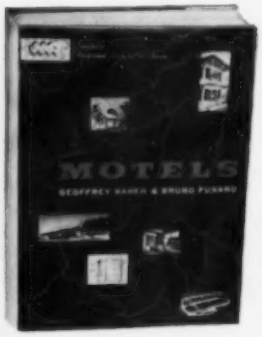


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# notices

(Continued from page 227)

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Sweet's File 23i/Sc

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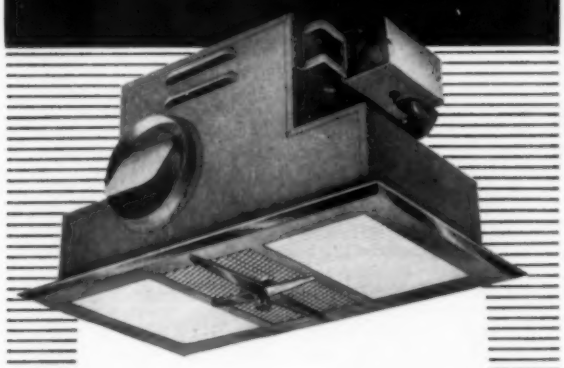

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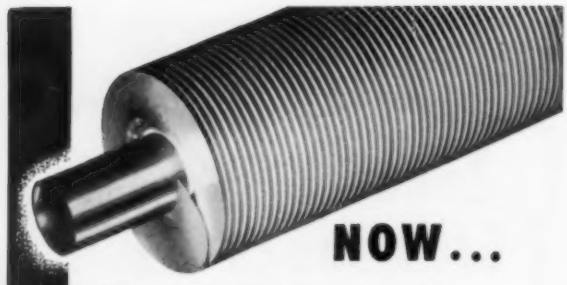

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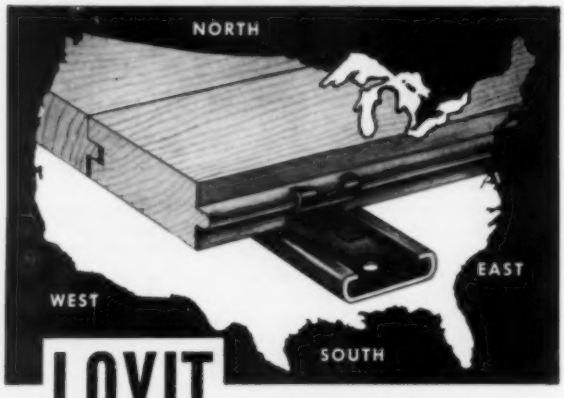


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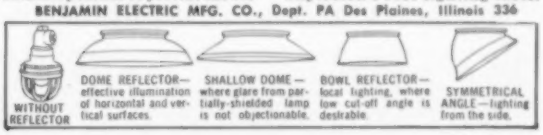
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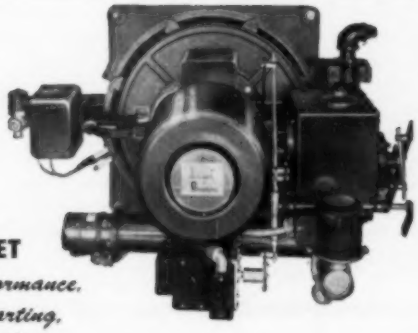

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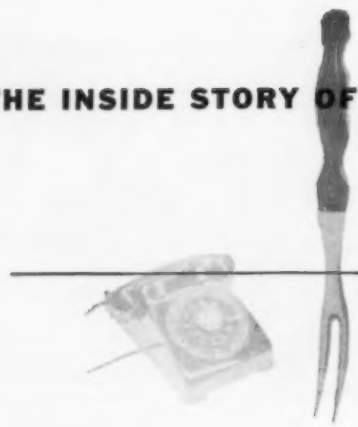

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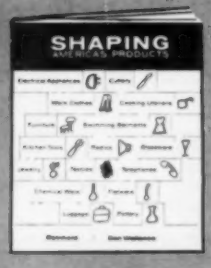


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P.S.

# can architects and decorators join hands?

There are many interesting remarks in this issue about the relationship of the architect and the city planner, and numerous hints that understanding between these two professional groups is improving. An indication is the fruitful joint conference at Harvard, reported up front. I have just been reading a call for another get-together, in a very different area of design, about which I am not so optimistic. In a recent editorial in *Interior Design*, Harry Anderson, editor of that magazine, writes, "I believe . . . that it is time that the AIA and the AID (American Institute of Decorators, for the information of you parochial architects. T.H.C.) got together for the purpose of clarifying their respective professional functions and spheres of operation." Possibly it's time to face a few facts about this situation. Although there are architects and interior designers who work well together as teams, with mutual respect and understanding, these are exceptions. By and large, architects consider decorators evil people who ruin good buildings by unrelated interior "treatment," and decorators refuse to believe that the architect, by training or special knowledge, is qualified to advise his client on interior furnishings and decoration.

It seems to me that there are some good arguments on each side. A joint meeting would raise some questions and cause some explorations that might be embarrassing to both groups. Architects would have to admit, for instance, that until very recently they had ignored the functions that the serious interior designer now tries to fulfill: the extension of the design process to include furniture, furnishings, even fixed, finish materials, lighting fixtures and some items of equipment. They would also have to admit that this aspect of the design of buildings has not been an important subject in the schools of architecture. If they were honest, they would concede that many architects are ignorant of the furniture, fabrics, carpeting and furnishings markets; and are poorly qualified to advise the client on price, availability, comparative technical qualities, and methods of manufacture. (It is to assist in this area that P/A's IDD Section functions.) And finally, they would have difficulty explaining (even to themselves) how the selection, purchase, delivery, and installation of loose, interior products fits into normal architectural practice and its code of ethics.

On the other hand, the decorators would first have to explain and define themselves. Is this a profession? Even the word "decorator" is being discarded in some quarters (*Interiors* invariably refers to its audience as "interior designers") and yet the AID is The American Institute of *Decorators*. Granted that there are fine and talented people in this field (many of them architecturally trained) isn't it true that there is nothing to prevent use of the title Interior Decorator by furniture salesmen, antique dealers, graduates of polite "design" courses in finishing schools, or pleasant ladies with time on their hands and "good taste"? And they would have to admit, I believe, that even though AID has made valiant efforts to establish educational standards, there is nothing comparable, in this field, to the degree-granting and accrediting criteria that one finds in architecture, engineering, landscape architecture, city planning (to say nothing of other *professional* activities, such as medicine, law, theology).

After this soul searching, a joint architect-decorator study group would come up against some sharp points of conflict. Architects would have to agree, not only to past negligence in this field, but to future abstention. Anderson's editorial states, "If the client is desirous of professional advice, then it becomes a professional obligation of the architect to recommend a specialist in the field of interior decoration." This assumes that architects *per se* are not qualified, using their own staffs, to design beyond the bare structure. I can't picture agreement on that.

If architects and decorators were going to work together —as architects and engineers do, for example—one group or the other would have to back down completely on ethical principles. The decorator's ethics require that the client be charged "list" prices for objects bought at trade-discount prices, with the difference constituting a major part of the decorator's payment. Of course this is directly contrary to the ethics of architectural practice. One reason that architects have difficulty doing interior design for their clients is that many manufacturers of interior products will do business only the decorators' way. The situation gets very complicated in the case of large-scale orders, and the confusion in some fields among list, discount, and contract prices is annoying to an architect used to passing firm bids on to his client, and receiving his payment in the form of a fee for professional services.

Many architects are building up their own interior design staffs. This, of course, widens the breach between architect and independently practicing decorator. Architectural schools are paying more attention to interior design as an aspect of architecture. A fairly large number of architects concentrate entirely on the field of practice represented by office layout, showroom design, department-store interiors, and so on. This makes it even less likely that the architectural profession would ever admit an "obligation" to turn interiors over to non-architect decorators.

Perhaps it is possible to define areas of activity and responsibility; at the moment I doubt it. I do think, however, that a talk would be healthy in finding more clearly how each group can improve its own approach to the design of interiors—by education, by methods of practice, by clarification of the fee and contract situation. That would be all to the good.

Thomas H. Creighton

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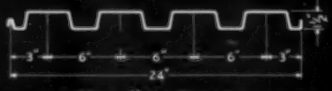


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*The steel panel at left was treated with Bonderite; the one at the right was not. Both panels were given a coat of Inland Epoxy Resin finish. After an "X" was intentionally scratched on them, the panels were subjected to the A.S.T.M. standard salt spray test for the same length of time. Note that in the finish over Bonderite, rust stopped at the scratch mark while it spread extensively over the plain steel panel.*

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